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WORLD CACAO PRODUCTION AND TRADE . . . . .

By B. C. Merdian*

Cocoa and chocolate are derived from the cacao tree indigenous to tropical America. Although more than half the world raw cacao crop is now grown in West Africa, South America still provides approximately 25 percent and the Caribbean area 10 percent. The United States absorbs about 40 percent of the world supply, including the major portion of that grown in South America. This relationship places cacao in a prominent position in any consideration of plans to improve inter-American commercial relations. In trade value, cacao ranks after coffee and bananas among United States imports of complementary (noncompetitive) edible agricultural products.

Cacao[1] makes a substantial contribution to the national economy of several Latin American countries. It is the principal agricultural export item of Ecuador, is second only to coffee in Venezuela, and in Brazil ranks third, after coffee and cotton. It is also of major economic importance in several other American Republics; yet in recent years slightly less than half the United States imports of cacao have been obtained from Latin American sources.

The decline in the relative position of Latin American cacao in the United States market may be due partly to the fact that the supply of low-grade cacaos from Latin America has fallen considerably below the rate of consumption in the United States, while the supply of the higher grades has exceeded United States requirements. However, the production potentialities of Latin America appear sufficient to supply United States requirements in all grades.

Cacao is grown commercially only in the Tropics, in production areas limited by soil and climatic conditions. It can be grown under irrigation, but with less favorable results than in areas having adequate rainfall. Since the beginning of the present century, production has increased in both Latin America and Africa, but the rate of increase in Africa has been much greater.

World cacao consumption, which has increased sevenfold during the past 40 years, in 1936 reached a peak of over 1,622 million pounds. The United States has become the leading world market. European countries normally have taken about half the total imports, with the United Kingdom, Germany, and the Netherlands the chief markets, purchasing largely from West Africa. Cacao from French African areas has gone chiefly to France, and in lesser quantities to the United States and the Netherlands.[2]

* Office of Foreign Agricultural Relations.

[1] The raw product is commonly known as cacao or cocoa beans. In this study "cacao" refers to the unmanufactured and "cocoa" to the processed or manufactured item.

[2] Unless otherwise indicated, comments on trade between colonial areas and consuming countries apply to conditions prior to September 1939. In most cases, trade figures are not complete after 1938.

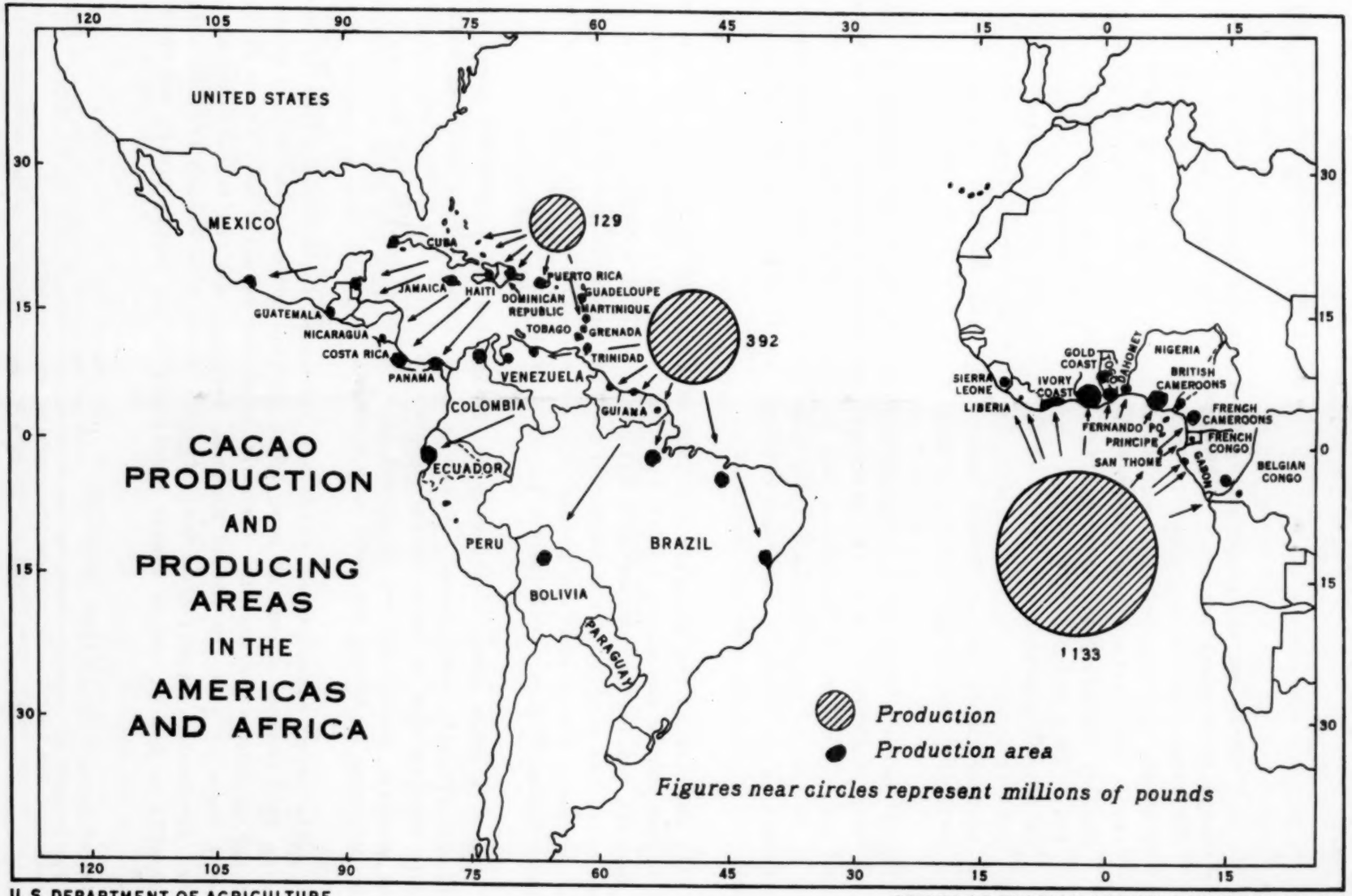

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Figure 1.

The remarkable expansion that has occurred in the industry may be attributed to the availability of extensive new areas suitable for cacao culture and to the rapidly increasing use of cacao products, largely as a result of the development of cocoa powder preparations, the wide variety of manufactured chocolate confectionery, and the popularizing of the soda fountain.

PRODUCTION SUMMARY

During 1896-1900 annual world production of cacao was about 182 million pounds. During the next 10 years production almost doubled and in the following decade more than trebled, the increase continuing until in 1936-37 a record volume of nearly 1,675 million pounds was produced.

This large increase over a comparatively short period was brought about chiefly by the extension of cacao cultivation into West Africa, and particularly by the rapid increase in production in the Gold Coast and Nigeria. In 1899-1900 over 80 percent of the world cacao crop was obtained from the tropical countries of the Western Hemisphere, and less than 1 percent from British West and French West Equatorial Africa; but by 1925-26 the Gold Coast alone produced 48 percent and the Gold Coast and Nigeria 56 percent, while the share of the Western Hemisphere had dropped to 32 percent. Within a quarter of a century the center of production had shifted from South America to West Africa.

Figure 2.-Harvesting cacao in Brazil.
(Courtesy Pan American Union.)

In the major producing countries of West Africa, where cacao was developed as a supplement to subsistence farming, it now ranks among the leading agricultural and export crops and constitutes the chief source of income for a large part of the native population. Indications are that production will continue to increase, though not at the same high rate as in the past 30 years.

TABLE 1.—*World cacao production in selected crop years; percentage distribution*

REGION	SHARE IN WORLD SUPPLY OF RAW CACAO		
	1899-1900	1925-1926	1936-1937
	Percent	*Percent*	*Percent*
Ecuador	18.3	4.5	2.8
Brazil	16.5	11.6	16.7
Venezuela	11.6	3.1	2.2
Other	3.0	.8	1.7
Total South America	49.4	20.0	23.4
Trinidad and Tobago	14.1	4.0	1.6
Dominican Republic	5.8	4.1	2.8
Grenada	4.8	.9	.4
Jamaica	1.2	.6	.3
Other (including Mexico)	6.0	2.9	2.6
Total Caribbean area	31.9	12.5	7.7
Total Western Hemisphere	81.3	32.5	31.1
Gold Coast	.7	48.2	37.5
Nigeria		8.2	13.0
French West and Equatorial Africa	–	3.6	11.0
Fernando Po	.9	1.4	1.4
São Tomé and Principe	13.6	2.6	1.2
Other	.4	1.9	3.6
Total Africa	15.6	65.9	67.7
Total Asia	3.1	1.1	.9
Total Oceania	–	.5	.3
Eastern Hemisphere	18.7	67.5	68.9
World total	100.0	100.0	100.0

Based on *International Yearbook of Agricultural Statistics* and official sources.

TABLE 2.—*World production of raw cacao by geographical regions, averages 1926-27 to 1935-36; annual 1935-36 to 1937-38*

REGIONS	PRODUCTION[1]					PERCENTAGE OF TOTAL				
	AVERAGE					AVERAGE				
	1926-27 TO 1930-31	1931-32 TO 1935-36	1935-36	1936-37	1937-38	1926-27 TO 1930-31	1931-32 TO 1935-36	1935-36	1936-37	1937-38
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Africa	758.4	937.8	1,086.1	1,133.1	990.2	63.2	64.9	67.3	67.7	63.8
South America	262.3	353.6	388.0	392.4	390.2	21.9	24.5	24.0	23.4	25.1
Caribbean area and Mexico	158.7	135.1	125.7	129.0	152.1	13.2	9.3	7.8	7.7	9.8
Other	21.0	19.5	14.7	20.2	19.2	1.7	1.3	.9	1.2	1.3
World total	1,200.4	1,446.0	1,614.5	1,674.7	1,551.7	100.0	100.0	100.0	100.0	100.0

[1] Crop year when available; otherwise export figures were used.

International Yearbook of Agricultural Statistics and official sources.

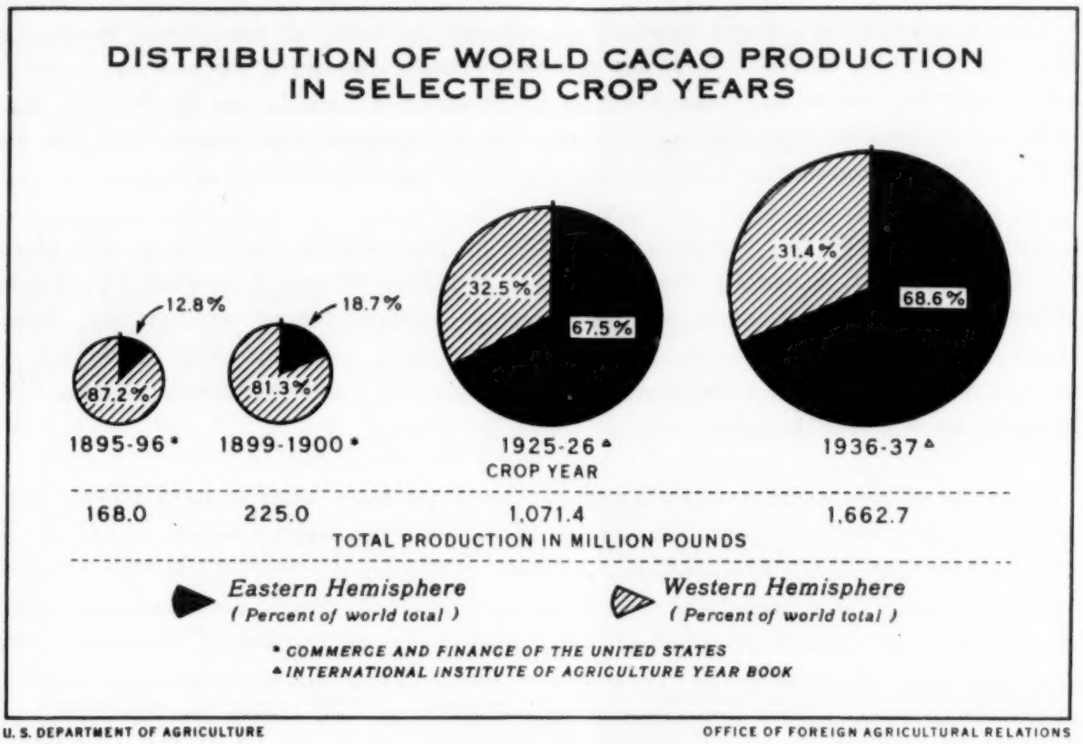

Figure 3.

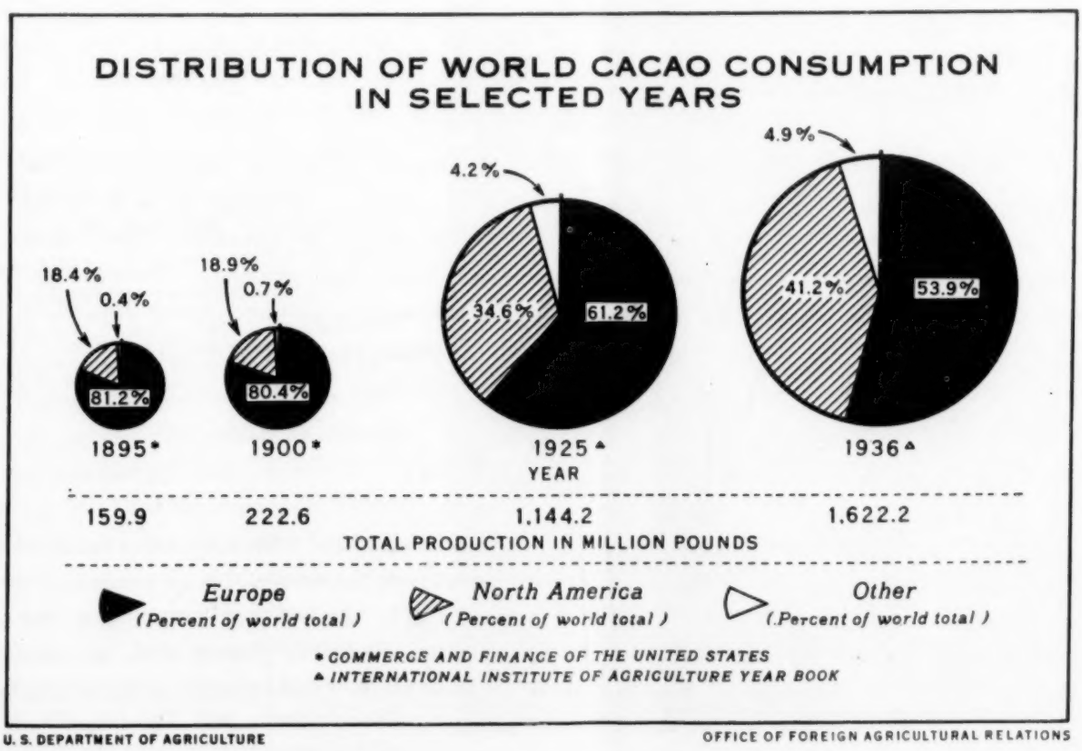

Figure 4.

In Brazil, the second largest world source, increased plantings in recent years should insure a growing future production, though in some of the other South American countries witchbroom and other plant diseases have caused a recession. In Central American countries cacao has been planted on abandoned banana areas. In the Caribbean area, notably Trinidad, the industry is meeting a serious challenge from the increasing output of low-production-cost areas and from destructive diseases.

Accurate statistics are not available on the annual harvest in all the cacao-growing countries, but since by far the major portion of world production is exported, trade figures in most instances may be taken as indicative of production. Some cacao is utilized in local manufacture of home consumption, particularly in Mexico and the Central and South American countries, but the quantity is relatively insignificant in comparison with the world total.

Because of inadequate storage facilities in many of the production areas and the danger of deterioration if the cacao is not sufficiently dried or if it is held too long in the tropical atmosphere, stocks are usually moved within a few months after the harvest. The trees bear the year around, but there are seasonal harvesting periods in the individual countries. The heaviest marketings, however, occur between October and February and in smaller quantities in midsummer or early fall. The period from October 1 to September 30, therefore, is taken as the crop year.

There are no available estimates of potential world acreage suitable for cacao cultivation, but it is believed that the major production areas are capable of considerable expansion and that the present yield in many countries could be increased through more intensive methods of cultivation. On the other hand, control of plant disease or the development of resistant varieties is essential in countries where plant diseases have become prevalent.

Cacao cultivation is one of the most profitable tropical industries, and though several years are required to obtain the initial yield, returns from a mature cacao plantation are relatively high on a comparatively small investment. The volume actually harvested annually, however, varies with prevailing prices. Except in the exceedingly low-production-cost areas, depressed world prices have usually led to indifference in care of plantings or to their complete abandonment; more favorable prices, however, have tended to restore farms to their maximum productive capacity.

The Cacao Tree

The cacao tree is a perennial evergreen and in its native state attains a height of approximately 40 feet. Under cultivation, however, it is usually kept at a height of from 15 to 25 feet to produce a more fully developed fruit and for convenience in cultivation. It comes into bearing when about 5 years old, attaining full productivity by its eighth year, and under favorable conditions should continue to bear for 30 to 80 years.

The fruit, or "pod," is about 6 to 10 inches in length and 3 to 5 in diameter, and contains 20 to 50 or more seeds, which, after being removed and passed through a

curing process of fermentation and drying, constitute the raw cacao or "cacao beans" of commerce. The beans resemble almonds, though less pointed, and their paper-like skin or shell contains two oily lobes that constitute the food substance of the bean.

Varieties and Commercial Grades

Numerous varieties of cacao are cultivated, but they may be grouped roughly as *criollo*, grown principally for its excellent flavoring quality and commercially classified as "fine," and the hardier types, including *forastero* and other varieties producing "ordinary" grades. New York spot prices are given below to indicate the varieties of ordinary and fine cacaos:

	June 3, 1940 Cents per pound		*June 3, 1940 Cents per pound*
Ordinary cacao:		Fine cacao:	
Accra, f.f. (Gold Coast)...	4.90	Trinidad:	
Lagos (Nigeria)	4.75	Estate	10.50
Sanches (Dominican Republic)	4.55	Caracas (Venezuela) ...	10.00
Superior Bahia (Brazil) ...	4.95	Grenada Estate	9.75
São Tomé, fine	6.50	Red Sun Arriba (Ecuador).	11.50
Up River Para (Brazil)	5.00	Laguayra Estate (Venezuela)	9.25

Venezuela, Ecuador, Costa Rica, Surinam, the British West Indies, Ceylon, and Java are the principal sources of fine cacaos, but their combined production, which from about 1900 to 1910 accounted for approximately 40 percent of the world total, now amounts to only between 10 and 15 percent. This very marked proportional decline is explained primarily by a great increase in production of the lower-grade cacaos during a period when production of fine grades remained stationary or decreased slightly. Among the producers of fine cacao Costa Rica is the only country that has recently shown a significant gain, but the supply from that source is not yet large. Ordinary cacaos now account for about 85 percent of the total, constituting the greater part of the production of the Gold Coast, Brazil, Nigeria, the Dominican Republic, the Ivory Coast, the Cameroons, Togoland, São Tomé, and Fernando Po.

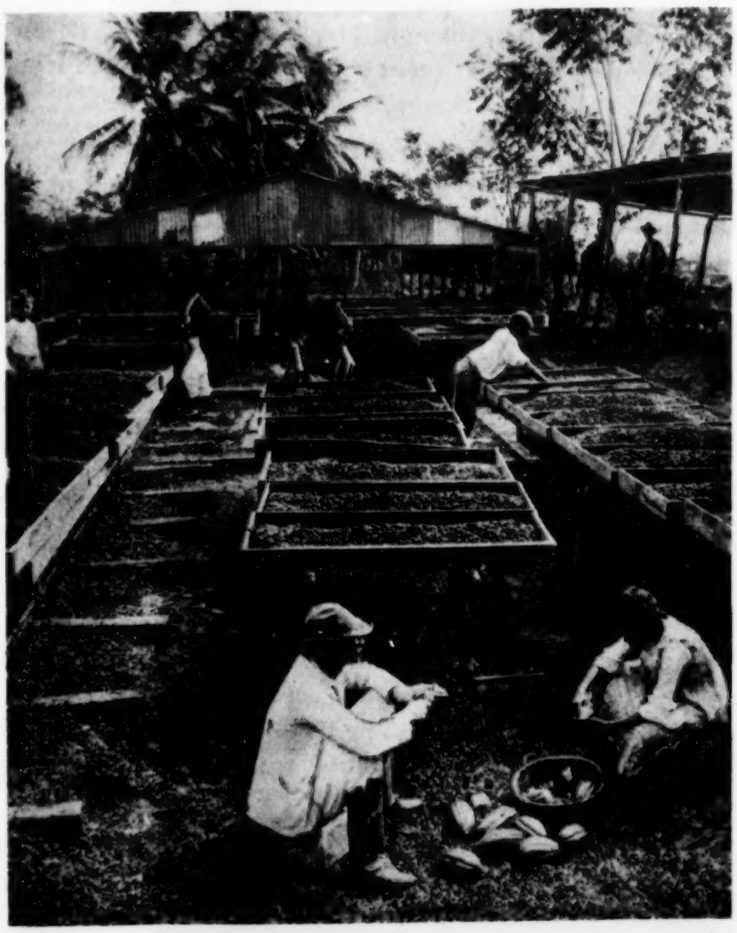

Figure 5.-Drying cacao beans in Ecuador. (Courtesy Pan American Union.)

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TRADE SUMMARY

World trade in cacao in 1938, the latest year for which comparable figures are available, was more than a third larger than the average annual trade during 1926-1930. Among the exporting areas, Africa shipped about 48 percent more in 1938 than in the earlier period, and exports from South America had increased by 50 percent. The 1938 exports from the Caribbean area, though larger than in other recent years, were smaller than in the 1926-1930 period.

The 1938 imports into North America, though smaller than in 1936 and 1937, were nearly 9 percent larger than the 1926-1930 average. Imports into European countries in 1938, however, were 44 percent larger than the average for the earlier years. Other consuming countries outside the Latin American area also registered substantial gains.

Broadly speaking, the world supply of cacao since 1900 has been equal to the increasing consumer demand in the United States and the leading European importing markets. There has been a limited flow into deficit producing countries, but with the exception of Colombia, Mexico, and the Philippines, the shipments have been relatively small and irregular. Most of the import trade in dry cacao beans is normally handled through the large markets of New York, London, Liverpool, Hamburg, or Havre. Smaller quantities are marketed through Lisbon, Amsterdam, and Bordeaux.

There is no indication that world cacao consumption has reached the saturation point. Its increasing utilization is suggested by the rise in per capita consumption in the United States[3] of from about 1.4 pounds in 1910 to 4.4 in 1939, and a similar, though less marked, upward trend in the other major consumer markets. Consumption of raw cacao in South American importing countries has remained relatively low, and in Russia and Asiatic markets has been almost negligible.

TABLE 3.—*World exports of cacao, averages 1926-1930 and 1931-1935; annual 1936 to 1938*

ORIGIN	EXPORTS[1]					PERCENTAGE OF TOTAL EXPORTS				
	AVERAGES					AVERAGES				
	1926-1930	1931-1935	1936	1937	1938	1926-1930	1931-1935	1936	1937	1938
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Africa	722.8	881.6	1,119.7	990.3	1,073.6	61.2	65.2	69.0	67.0	66.3
South America	238.5	284.1	348.1	314.9	360.1	20.2	21.0	21.4	21.3	22.2
Caribbean area	169.6	150.0	121.1	125.6	153.1	14.3	11.1	7.5	8.5	9.5
Other	50.8	37.1	33.8	46.8	32.0	4.3	2.7	2.1	3.2	2.0
Total	1,181.7	1,352.8	1,622.7	1,477.6	1,618.8	100.0	100.0	100.0	100.0	100.0

[1] Including reexports. Calendar year when available.

International Yearbook of Agricultural Statistics and official sources.

[3] Based on a 3-year moving average of net imports of cacao into the United States and population estimates of the Bureau of the Census.

TABLE 4.—*World imports of cacao, averages 1926-1930, 1931-1935; annual 1936 to 1938*

DESTINATION	IMPORTS[1]					PERCENTAGE OF TOTAL IMPORTS				
	AVERAGES					AVERAGES				
	1926-1930	1931-1935	1936	1937	1938	1926-1930	1931-1935	1936	1937	1938
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Europe	644.3	746.6	873.7	769.0	926.6	56.2	57.0	53.9	51.4	60.8
North America	438.9	503.7	667.6	643.6	476.7	38.3	38.5	41.2	43.0	31.2
South America	22.6	18.5	24.4	18.0	22.3	2.0	1.4	1.5	1.2	1.5
Caribbean area and Mexico	13.2	11.8	11.7	12.1	9.3	1.1	0.9	0.7	0.8	0.6
Other	27.3	29.0	44.8	53.4	90.0	2.4	2.2	2.7	3.6	5.9
Total	1,146.3	1,309.6	1,622.2	1,496.1	1,524.9	100.0	100.0	100.0	100.0	100.0

[1] Special trade figures when available.

International Yearbook of Agricultural Statistics and official sources.

TABLE 5.—*Cacao exports by principal countries of origin, averages 1926-1930, 1931-1935; annual 1936 to 1938*

COUNTRY	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
Gold Coast	490.3	543.5	697.0	529.1	589.6
Brazil	151.5	214.0	268.3	231.7	281.9
Nigeria[1]	112.3	157.1	180.4	231.2	217.5
Ivory Coast and Dahomey	30.8	71.4	109.7	106.0	116.2
French Equatorial Africa[2]	18.8	38.1	54.3	60.7	68.5
Dominican Republic	47.6	50.3	40.0	43.3	51.5
Trinidad and Tobago[3]	55.1	44.3	28.3	26.3	42.4
Ecuador	47.0	35.2	43.4	47.3	40.7
Venezuela	39.3	34.7	36.3	35.9	(4)
São Tome and Principe	31.8	25.1	23.6	17.7	28.1
Fernando Po	17.7	20.7	29.8	24.1	28.4
Costa Rica	12.2	13.7	15.4	16.1	12.2
Other	127.3	104.7	96.2	108.1	141.8
Total	1,181.7	1,352.8	1,622.7	1,477.5	1,618.8

[1] Including some shipments from British Cameroons.

[2] Largely French Cameroons.

[3] Exclusive of reexports.

[4] Not shown.

International Yearbook of Agricultural Statistics and official sources.

PRICE TRENDS

Cocoa and chocolate products, formerly considered luxuries, have now become popularly priced and widely used food items, and in the process of transition the raw product has been subject to wide price variations. The trend of prices, however, over the past four decades, has been definitely downward (see table 6).

The general decrease in price levels is attributable largely to the increasing quantities of ordinary grades available from low-production-cost sources; the recent improvement in the quality of lower grades, particularly from West Africa; and to developments in manufacturing methods permitting the use of larger quantities of ordinary grades and reducing the requirements for higher-priced cacaos.

In the period from 1900 to 1913, when the supply of raw cacao began to increase significantly, ordinary grades sold for prices 2 to 3 times as high as current[4] quotations. Total production during this period rose from less than one-eighth to nearly one-third of the present volume.

TABLE 6.—*Yearly average wholesale price of cacao at New York and London, 1913 to 1940*

YEAR	PRICE PER POUND AT				YEAR	PRICE PER POUND AT -			
	NEW YORK[1]		LONDON[2]			NEW YORK[1]		LONDON[2]	
	ACCRA	ARRIBA	ACCRA	TRINIDAD		ACCRA	ARRIBA	ACCRA	TRINIDAD
	Cents	*Cents*	*Cents*	*Cents*		*Cents*	*Cents*	*Cents*	*Cents*
1913	13.9	15.3	12.8	15.2	1927	15.8	19.6	15.6	18.0
1914	12.4	13.0	12.0	13.4	1928	12.9	15.3	13.5	15.4
1915	16.7	17.6	16.1	17.8	1929	10.4	15.5	10.2	13.7
1916	14.2	17.0	13.6	18.1	1930	8.1	14.6	8.3	12.6
1917	11.2	12.9	10.2	18.5	1931	5.2	12.0	5.9	9.8
1918	12.9	13.6	13.8	19.5	1932	4.4	9.3	6.1	9.8
1919	18.6	22.4	16.6	22.1	1933	4.4	9.2	4.4	7.0
1920	13.4	20.4	13.4	18.3	1934	5.2	9.2	5.1	9.5
1921	7.8	10.2	7.2	10.5	1935	5.0	7.6	5.1	9.2
1922	9.2	11.6	8.9	12.8	1936	6.8	9.3	7.1	11.3
1923	7.6	11.5	7.2	10.6	1937	8.4	11.0	8.6	15.8
1924	7.6	15.2	7.3	12.2	1938	5.3	8.8	5.6	9.1
1925	9.5	17.1	9.7	16.0	1939	4.8	10.5	4.9	8.5
1926	11.5	18.1	11.3	14.8	1940[3]	5.3	11.4	6.2	[4] 12.1

[1] Based on Tuesday quotations. Accra, fair fermented; Arriba, average of Red Sun and Season. Source: Accra, 1913 to 1918, incl., commercial sources; otherwise, Bureau of Labor Statistics.

[2] Based on Tuesday quotations. Accra, fair fermented, 1913 to 1938, incl.; good fermented, 1939 and 1940; Trinidad, plantation. Source: 1913 to 1932, incl., International Monetary and Economic Conference, London, 1933, basis of prices ex-store Liverpool; 1932 to 1938, incl., *International Yearbook of Agricultural Statistics*, London spot, incl. import duty; 1939 and 1940, commercial sources.

[3] January-September, incl.

[4] Grenada, May to September, incl.

[4] First 9 months of 1940.

In the depression years 1932 and 1933, prices in New York reached a record low, although both production and consumption remained fairly constant. There was some recovery at the end of 1936 and early in 1937, with large quantities of raw cacao moving into manufacturers' plants and world stocks somewhat below normal. Toward the close of 1937 there was a sharp downturn, which carried through 1938 and well into 1939. The slight rise that occurred in the last quarter of 1939 and continued into 1940 was attributed largely to increased shipping costs, since world stocks were reported to be heavy.

Before the current war it appeared that marketing practices affecting cacao were tending to reduce the likelihood of wide price fluctuations. In the producing countries better warehousing facilities had been provided at terminal points, and a more orderly marketing procedure was being developed. War conditions, however, have disrupted the trade with Europe and increased the cost of shipping to the United States. Although no definite appraisal of future price developments is possible, it seems likely that prices will decline in the producing countries under further accumulation of stocks, and will remain relatively high in importing countries, chiefly because of restricted shipping space.

PRINCIPAL CACAO EXPORTING REGIONS

The Gold Coast, Brazil, Nigeria, and the Ivory Coast, the "big four" cacao exporting countries, furnish about 80 percent of the world supply (see table 5). Although the Gold Coast ranks first, with more than double the volume of its nearest competitor, the industry has made substantial progress in each of the major exporting countries. Of the lesser producers, French Africa has shown the highest rate of increase, followed by Costa Rica and Fernando Po. Significant downward trends were indicated in Trinidad and São Tome, though by 1938 these countries had to some extent recovered their former volume.

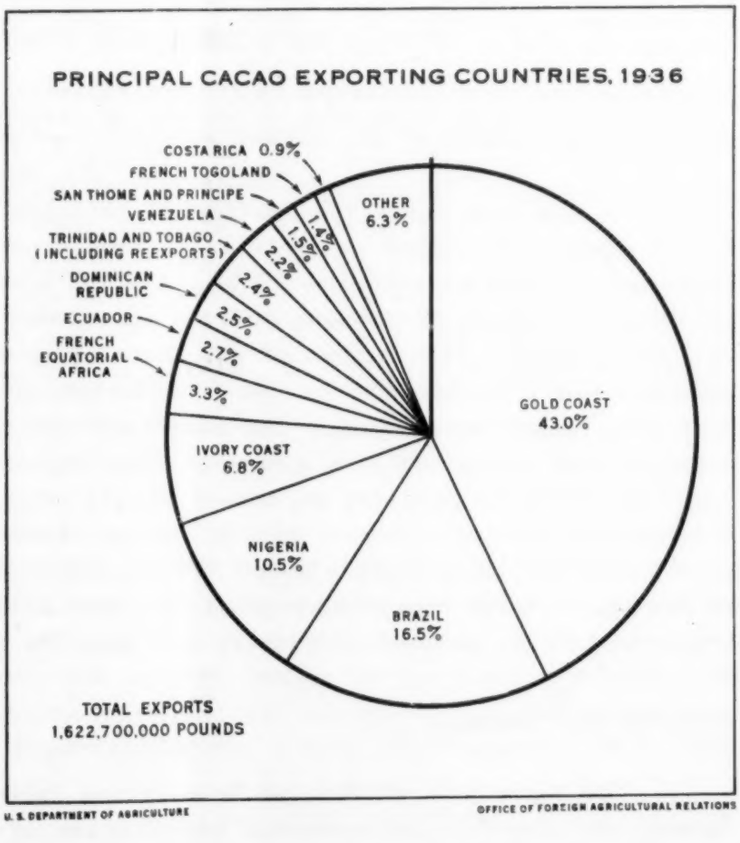

Figure 6.

Africa

African cacao production reached its peak in 1936-37, at

1,133 million pounds, representing over 67 percent of the world total (table 1). The principal producers are British West Africa, where three-fourths of the African crop is grown; French West and Equatorial Africa, producing from one-seventh to one-fifth; and, to a much smaller extent, the Belgian Congo, the islands of Fernando Po, São Tomé, and Principe off the west coast, and Madagascar (table 7). The greater part of this area lies within 10 degrees of the equator and, favored with suitable soil and climate and an abundance of land and labor, offered an excellent field for expansion of the cacao industry.

TABLE 7.—*African cacao production, averages 1926-27 to 1930-31, 1931-32 to 1935-36; annual 1935-36 to 1937-38*

REGION	PRODUCTION					PERCENTAGE OF WORLD TOTAL PRODUCTION				
	AVERAGES					AVERAGES				
	1926-27 TO 1930-31	1931-32 TO 1935-36	1935-36	1936-37	1937-38	1926-27 TO 1930-31	1931-32 TO 1935-36	1935-36	1936-37	1937-38
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Per-cent*	*Per-cent*	*Per-cent*	*Per-cent*	*Per-cent*
British West Africa:										
Gold Coast[1]	509.0	544.3	599.9	627.2	490.5	42.4	37.6	37.2	37.5	31.6
Nigeria[2]	104.7	159.0	194.9	217.8	204.1	8.7	11.0	12.1	13.0	13.2
Other	19.7	37.1	48.7	55.4	39.3	1.7	2.6	2.9	3.3	2.5
Total	633.4	740.4	843.5	900.4	733.9	52.8	51.2	52.2	53.7	47.3
French West and Equatorial Africa:										
Ivory Coast	35.7	84.6	109.8	106.0	116.2	3.0	5.9	6.8	6.3	7.5
French Cameroons	20.5	43.1	52.5	58.6	68.3	1.7	3.0	3.2	3.5	4.4
Other	14.6	17.7	24.3	20.1	16.8	1.2	1.2	1.6	1.2	1.1
Total	70.8	145.4	186.6	184.7	201.3	5.9	10.1	11.6	11.0	13.0
Fernando Po	17.9	24.8	29.8	24.0	28.4	1.5	1.7	1.8	1.4	1.8
São Tomé and Principe	32.6	22.5	20.9	19.4	24.9	2.7	1.6	1.3	1.2	1.6
Other Africa	3.7	4.7	5.3	4.6	1.7	.3	.3	.4	.3	.1
Total Africa	758.4	937.8	1,086.1	1,133.1	990.2	63.2	64.9	67.3	67.7	63.8

[1] Includes some cacao originating in British Togoland.
[2] Includes some cacao originating in the British Cameroons.
International Yearbook of Agricultural Statistics and official sources.

At the time cacao was introduced into the Gold Coast and Nigeria the established crops were rubber and palm oil. Food crops were grown chiefly for local consumption or internal exchange. The primitive economy of the West African native followed the system of shifting cultivation common to agricultural communities of the African tropics. This system of rotational occupation of tribal lands by short-term cultures was not conducive to the introduction of a permanent, cultivated crop such as cacao, which would occupy the same land for a long period. Once it was demonstrated that cacao could be grown in this region, however, the industry grew very rapidly, since it provided an annual export crop yielding greater returns than any alternative occupation, even in the less accessible regions. Along with this expansion there developed among the natives a system of tenure approaching that of private ownership. For the most part production costs have been low, especially in the major producing areas, where the industry has made the greatest progress.

BRITISH WEST AFRICA

The cacao area of British West Africa includes the Gold Coast, Nigeria, Sierra Leone, and the British mandated territories of Togoland and the Cameroons. The plantation system has developed to only a limited degree, since the industry is largely in the hands of the natives. Farms average from 1 to 10 acres, produce only

a few tons of raw cacao a year, and are operated with the help of migratory labor, particularly during the harvest. There are, however, instances of multiple or absentee ownership, often of widely scattered farms, operated under occasional or periodic supervision or more commonly under some system of sharecropping.

In its early development the cacao industry of this region was greatly handicapped by lack of transportation facilities, and head-carrying by the natives was the common means of portage. Along with the rapidly increasing production, however, an extensive marketing structure was built up, with railway and motor transport connecting the principal production and shipping centers.

The problem of British West African cacao has been largely one of quality. With a view to improving its position in world markets, the governments of the Gold Coast and Nigeria adopted systems of compulsory inspection and grading intended to meet the import requirements of the major consuming countries.

A comprehensive research program, including experimentation in the control of plant disease and the production of better types and higher yields, has been adopted and will be carried on at the Tafo Research Station in the Gold Coast.

The cacao crop of British West Africa is grown principally for export. The United States has been the leading market, taking approximately 30 percent, followed by the United Kingdom (25 percent), Germany (21 percent), and the Netherlands (15 percent). Smaller shipments have been made to Australia, Canada, France, Norway, and other countries.

TABLE 8.—*Cacao exports from British West Africa to principal markets, averages 1926-1930, 1931-1935; annual 1936 to 1938*

COUNTRY OF DESTINATION	AVERAGE 1926-1930	AVERAGE 1931-1935	1936	1937	1938
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
United States[1]	164.2	178.2	279.7	252.6	170.2
United Kingdom[1]	132.3	175.3	220.2	185.7	305.8
Germany[1]	137.0	165.1	189.5	153.7	138.4
Netherlands[1]	112.2	119.6	104.1	98.3	110.2
Others	57.1	62.6	84.6	70.6	83.4
Total	602.8	700.8	878.1	760.9	808.0

[1] Exports from Gold Coast and Nigeria.
International Yearbook of Agricultural Statistics and official sources.

The *Gold Coast* is the world's largest single cacao-producing country. Its extensive farm and forest regions, with rich soil and uniformly high humidity, have encouraged the cultivation of this tropical crop, which employs about two-thirds of the native population. The area under cacao approximates 1 million acres, bearing an annual yield of between 500 and 600 pounds of raw cacao per acre. The principal harvesting season extends from October to February, and a secondary crop, accounting for only about 5 percent of the total, is gathered 4 or 5 months later.

Cacao has become the principal export product of the Gold Coast, accounting for 95 percent of the value of agricultural exports and for 60 percent of total exports. The marketing of the crop, which has evolved from primitive methods resembling

those of early North American trading, is now carried on almost exclusively through African middlemen who buy on behalf of exporting firms. Prices are paid on the basis of "head-loads," which are bags of approximately 60 pounds. Since farmers usually sell in small lots, transportation and handling costs to distant marketing centers would in many instances make direct sale unprofitable. Credit facilities have expanded with the cacao industry, and the making of advance payments to farmers on the forthcoming crop is a common practice. Most of the lending is done by cacao buyers to whom loans afford an opportunity of controlling supplies before they are actually available.

There are a few independent buyers, who operate intermittently and usually sell through brokers in the larger cacao markets. During recent years a growing movement has developed toward the formation of producers' cooperative societies and marketing committees. However, by far the major portion of the crop has normally been handled through large importing and manufacturing firms, principally European, with headquarters and storage warehouses at Accra or other terminal points, who maintain a network of buying stations reaching out into the cacao districts. Merchant firms, performing the dual function of purchasing cacao from the farmer and selling him imported merchandise, export approximately 75 percent of the crop, and about 20 percent is handled by manufacturing firms who do not engage in merchandise trade but who themselves consume the bulk of the cacao they buy.

Exports from the Gold Coast of raw cacao ("Accra") during 1892 to 1938 were as follows:

	1,000 pounds		*1,000 pounds*
1892-1896	27	1922-1926	461,122
1897-1901	737	1927-1931	505,640
1902-1906	10,553	1932-1936	573,514
1907-1911	46,892	1936	696,962
1912-1916	130,605	1937	529,088
1917-1921	264,970	1938	589,620

Nigeria ranks third as a producer of raw cacao. Its cacao-growing area, considerably less extensive than that of the Gold Coast, is limited to a coastal belt about 150 miles wide, and the industry does not occupy as prominent a commercial or agricultural position. In the Nigerian export trade cacao ranks after palm kernels, peanuts, and palm oil.

The crop is grown primarily for export, largely on small native farms. Although production is only about a third as large as that of the Gold Coast, its volume has shown a higher rate of expansion in recent years, having more than doubled during the past decade. This increase is due chiefly to the new farms that have come into production rather than to increases in yields of established areas.

The Nigerian marketing structure resembles that of the Gold Coast. Most of the cacao trade in this country is handled through merchant firms established in the Gold Coast, but direct selling by farmers is carried on to a greater extent, since the compactness of the Nigerian cacao belt makes the production areas more readily accessible to the marketing centers. The Nigerian product is known commercially as "Lagos."

Exports of Nigerian cacao from 1892 to 1938 are shown below:

	1,000 pounds		*1,000 pounds*
1892-1896	72	1922-1926	82,918
1897-1901	323	1927-1931	111,438
1902-1906	1,035	1932-1936	169,546
1907-1911	5,320	1937	220,416
1912-1916	13,444	1938	208,886
1917-1921	38,739		

FRENCH WEST AND EQUATORIAL AFRICA

The cacao industry of French West and Equatorial Africa is centered in the Ivory Coast and the French mandated territory of the Cameroons, where soil and climate have been favorable to its development.

Before 1920 the cacao crop of this region was comparatively unimportant, and only in recent years has it reached a considerable volume. During the 10 years preceding 1937-38 annual production rose from an average of 71 million to over 200 million pounds, representing an increase of from nearly one-eighteenth of the world total to over one-eighth. France has absorbed a large part of the cacao exports from its African possessions. These exports rose from an average of over 62 million pounds in 1926-1930 to over 201 million in 1938.

Greatest progress was made in the *Ivory Coast*, where cacao was developed partly as a plantation industry under European management, but to a greater extent by native farmers. Although introduced as early as 1870, it was not until the unfavorable rubber situation developed in about 1912 that an active interest was taken in cacao cultivation. Since 1930 production has increased more than threefold, and now accounts for nearly half the value of total exports. The Ivory Coast ranks fourth among the world's leading sources of cacao.

TABLE 9.—*Cacao exports from French West and Equatorial Africa, averages 1926-1930, 1931-1935; annual 1936 to 1938*

REGION	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
French West Africa[1]	43.8	88.0	132.2	123.7	133.1
French Equatorial Africa[2]	18.8	38.1	54.3	60.7	68.4
Total	62.6	126.1	186.5	184.4	201.5

[1] Largely Ivory Coast, smaller quantities from French Togoland.
[2] Largely the French Cameroons.
International Yearbook of Agricultural Statistics.

The crop year extends over about the same period as in the Gold Coast and Nigeria, and the quality of the product is similar to that of "Accra." Approximately 173,000 acres of relatively small native farms and 25,000 acres of European-owned plantations are under cultivation, the yield per acre averaging between 400 and 500 pounds annually.

In the *French Cameroons*, which now rank fifth among the leading world sources, cacao production has also made a substantial gain, and is one of the most important

agricultural products. The industry has been developed largely by native farmers with the active cooperation of the French Government, and though the country is mountainous, its tropical climate affords conditions for further expansion.

The 1935-36 area under cacao was estimated at nearly 82,000 acres, with an average annual yield of 700 pounds per acre. Indications are that plantings have increased during the past few years.

SÃO TOMÉ AND PRINCIPE

São Tome and Principe, situated off the west coast of Africa, form a province of Portugal, and about half their combined area of 384 square miles is devoted to cacao. The plant was introduced into Principe in 1822 and into São Tome by 1830, but for many years production expanded little. By 1910, however, with a combined production of approximately 85 million pounds, these islands ranked among the leading world sources. Since 1920, however, there has been a steady decline, due largely to plant disease and deterioration of soil. In 1930-31 production averaged less than 33 million pounds annually; by 1936-37 it had dropped to a little over 19 million, but in the following year returned to nearly 25 million pounds.

The principal harvest is in October and November, with a smaller one in March and April. An ordinary-grade cacao is produced, but considerable care is taken in its cultivation and preparation for market. The crop is grown on two types of plantations. Those owned and operated by the natives are usually small, averaging about 12 acres in size. The large estates, or *rocas*, resembling small villages in their organization, are owned and operated chiefly by Portuguese. Because of the relatively small native population it has been necessary to recruit labor from neighboring countries.

The major portion of the export crop is handled through the port of Lisbon, but direct shipments to foreign countries have increased. The Netherlands, Germany, and the United States have been the principal markets.

FERNANDO PO

Cacao cultivation in the Spanish island of Fernando Po dates from about the middle of the sixteenth century, but until about 1910 the industry was unimportant. Since then production has increased, and in the peak year of 1935-36 nearly 30 million pounds were produced.

The comparatively small and well-cared-for plantations are operated by Spanish, Portuguese, German, or English planters, and, as in São Tomé, labor is supplied largely from neighboring regions.

The area under cacao, which between 1926 and 1930 averaged slightly over 59,000 acres, increased to nearly 99,000 by 1936-37. The annual yield during this period averaged about 300 pounds per acre. Almost the entire crop goes to the Spanish market, for which the cacao is especially prepared.

South America

Cacao production in South America has steadily increased, though not in sufficient quantity to equal the expansion in British West Africa. In spite of the damage caused by plant disease, especially in Venezuela and Ecuador, total South American cacao production during the past decade rose from an average of 262 million to 392 million pounds, representing a gain of nearly 50 percent. This increase took place largely in Brazil and, to a much smaller extent, in Colombia.

In contrast to the small farms in British West Africa, a considerable portion of South American cacao is grown on medium or large-sized estates. This is particularly true of Ecuador, where a *hacienda* may contain from 300,000 to a million or more trees. There are, however, a great many small cacao farms throughout tropical South America.

Cacaos from this region differ widely in grade. Those from Venezuela and Ecuador, noted for their excellent flavoring quality, rank among the finest on world markets, whereas the bulk of Brazilian and other South American production consists principally of ordinary grades.

Consumption of cacao preparations is general in South America, though not in substantial volume. Venezuela and Ecuador supply their demand largely from local sources; Brazil imports relatively small quantities of a fine grade for flavoring purposes, principally from Venezuela; Colombia, although a producer and exporter, imports cacao in varying quantities, as do Peru and Surinam, both minor producers and exporters.

BRAZIL

Brazil, the second largest world source of raw cacao, has increased its production in recent years. The 1937-38 crop of over 282 million pounds was nearly double that of a decade earlier, and subsequent estimates indicate a continued upward trend. The cacao acreage was increased by about 25 percent in the same decade and how totals over 525,000 acres. The present estimated yield of 600 pounds per acre is slightly less than that of the Gold Coast.

About 90 percent of the total Brazilian crop is grown in the State of Bahia, where the soil and climate are favorable to production. Cultivation of finer grades has been encouraged by agricultural authorities, but the hardier varieties producing ordinary cacao are usually preferred because of their higher yields.

Cultivation and marketing conditions in Brazil range from primitive methods and equipment to well-managed farms and plantations. Many of the holdings are relatively small, but medium-sized or large plantations are not uncommon. The limited local labor supply necessitates dependence on casual workers during the harvest season.

Since its foundation in 1931 the Cacao Institute of Bahia has accomplished a great deal toward improvement of the industry in Brazil. Created under government

supervision for the purpose of regulating cultivation, grading, and marketing of cacao, the Institute has helped planters by giving financial assistance and providing improved storage facilities. In addition the Institute has become one of the principal cacao exporters of Brazil. It is supported by a tax on all cacao exports from the State of Bahia, which ships about 90 percent of the cacao exported from Brazil.

Cacao ranks third among Brazil's export crops, exceeded by coffee and cotton. Its place as a major export commodity was well established before cacao was first planted in the Gold Coast. Development of the industry in Brazil has been less rapid than in West Africa because of the importance of other tropical crops, and it was not until about 1930 that it began to assume substantial proportions. The growth in Brazilian cacao exports since 1820 are shown in the following tabulation:

	1,000 pounds		*1,000 pounds*
20-year average:		10-year average:	
1821-1840	3,078	1921-1930	139,452
1841-1860	7,046	5-year average:	
1861-1880	9,226	1931-1935	214,049
1901-1920	75,633	1938 (preliminary)	281,946

For some time the United States has been the principal market for Brazilian cacao, taking about 80 percent of total exports in recent years. Most of the remaining crop normally has been absorbed by the countries of Western Europe, principally Germany, the Netherlands, and Italy. Argentina and other South American countries have drawn chiefly on Brazil for their requirements of ordinary cacao.

TABLE 10.–*Cacao exports from Brazil to principal markets, averages 1926-1930, 1931-1935; annual 1936 to 1938*

COUNTRY OF DESTINATION	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
United States	90.6	156.7	198.1	188.0	186.4
Germany	14.3	15.6	10.3	5.6	49.6
Netherlands	9.5	9.4	13.0	7.8	6.0
Argentina	8.5	8.1	11.9	9.1	11.0
Italy	4.7	4.9	13.3	5.0	6.7
Others	23.9	19.3	21.7	[1] 16.2	[2] 22.2
Total	151.5	214.0	268.3	231.7	281.9

[1] Preliminary.
[2] Preliminary. Shipments from Bahia and Ilheos.
Brazilian publications and American consular reports.

Cacao grown in the Amazon Valley is shipped chiefly through the port of Belem (Para), and though its growing area in the State of Bahia extends for some distance along the Atlantic seaboard, shipments from this source are made principally through the port of Bahia.

ECUADOR

In the early development of the cacao industry Ecuador ranked among the foremost world sources in both quality and volume. Production did not keep pace with the expansion in other countries, however, and during the past 15 years it has remained at between about 35 and 47 million pounds annually.

Most of the cacao-growing areas of Ecuador are readily accessible to transportation facilities. Farms vary in size, but most of the crop is produced on large estates. The principal harvesting season extends from April to June, and a smaller crop is obtained from December to January. The average annual yield of about 1 pound of cured beans per tree decreased considerably between 1922 and 1934 as a result of the spread of plant disease, but has recovered slowly since that time.

The government of Ecuador has encouraged development of the cacao industry through financial aid to growers and assistance in conducting experiments for the control of plant disease. Cacao is Ecuador's leading export, and has been termed the barometer of its business and economic activity. Only about 5 percent of the annual harvest is consumed locally, and a steady foreign market at favorable prices is usually available. Most of the cacao trade has been handled through a few large exporters in Guayaquil, but there are several firms that ship relatively small quantities. The United States and Germany have been the leading markets, with Belgium, France, and Italy also taking substantial quantities.

VENEZUELA

Venezuela is one of the countries producing choice cacao, its *Caracas* ranking among the finest grades. During the past decade between 35 and 39 million pounds have been harvested annually. Most of the holdings are small. As in Ecuador, the main harvest season extends from April to June, and a smaller crop is obtained from December to January.

The domestic market absorbs relatively little of the crop. Local factories supply the demand for beverage cocoa and a rather inferior grade of eating chocolate. Small quantities of imported chocolate confectionery are sold at high prices. Cacao ranks second to coffee among the principal export crops of Venezuela, though its volume has shown a downward trend during the past decade. The finest grades from the Caribbean littoral are shipped chiefly from La Guaira, Puerto Cabello, or Maracaibo. The United States and France, taking about 40 and 26 percent, respectively, have been the principal markets. Trinidad has taken about 28 percent, principally from the Orinoco Valley, most of which has been reexported.

COLOMBIA

Cacao products are widely used throughout Colombia, and the local supply must be supplemented by imports. Production has nearly doubled during the past 10 years and in 1937-38 amounted to over 25 million pounds. By 1936-37 more than 82,500 acres were under cacao, representing an increase of 7,000 acres over the 1930-31 acreage. For the most part the domestic crop is grown on small farms. Harvesting takes place in June and December, and the quality of the product is considered very good.

OTHER SOUTH AMERICAN PRODUCING REGIONS

Surinam exported small quantities of cacao as early as 1725. By 1895 it had attained its highest annual production of nearly 10 million pounds. Within a

comparatively short period, however, cacao from this source had almost disappeared from the export market because of destruction by plant disease. During recent years production has averaged between 200,000 and 400,000 pounds annually, and only limited quantities have been exported at irregular intervals. Consumption, though comparatively small in volume, requires occasional imports.

Little cacao from the remaining countries of tropical South America - Peru, Bolivia, and British and French Guiana - enters into international trade. The limited production is usually consumed locally, and additional quantities must be imported.

The Caribbean Area

The Caribbean area, including the West Indies, Central America, and Mexico, furnishes about 10 percent of the world supply of raw cacao. The trend in the individual countries has varied during the past decade, but that for the area as a whole has been downward, reaching its lowest point in 1935-36. The upturn that followed has restored production to almost the 1926-1930 level.

In the Dominican Republic and the British West Indies, the major producers of this area, cacao is grown primarily for export; but production for home consumption is general throughout the Central American Republics and Mexico, where the crop, though an important factor in each country's domestic economy, does not contribute materially to the world supply. The inhabitants are regular consumers of cacao, and the demand is supplied partly through import.

DOMINICAN REPUBLIC

For nearly 20 years the Dominican Republic has maintained cacao production at a level of about 50 million pounds. The crop is grown throughout the Republic, but the principal producing regions are in the northern and eastern sections.

Approximately 158,000 acres are under cultivation, with an average annual yield of between 250 and 300 pounds per acre. The principal harvesting season extends roughly from March to August, and the secondary harvest from October to February.

An ordinary grade of cacao is produced, known commercially as "Sanches." Grown chiefly by small producers, the crop is primarily for export, and only about 5 percent of the harvest is absorbed locally.

The Dominican Republic, now ranking sixth among cacao-exporting countries, has been one of the leading world sources for the past 30 or 40 years. Most of its production areas have ample transportation facilities to shipping points. The United States has been the principal market, annually taking about 90 percent of the crop, and current prices in the local cacao markets have been governed largely by New York quotations.

BRITISH WEST INDIES

The British West Indies, principally Trinidad and Tobago, Grenada, and Jamaica, are among the leading producers of fine-grade cacao. During 1926-1930 these islands produced about 6 percent of the world cacao supply, but during the past 10 years the trend of production has been downward, reaching the lowest point in 1936-37 with 2.4 percent. The upswing to 152 million pounds in 1937-38, however, was slightly above the 1931-1936 average.

During the "golden age" of the cacao industry in Trinidad - between 1870 and 1920 - and the later period of relatively high prices, the industry operated on a profitable basis, but in more recent years it has been faced with serious competition from West Africa, where production costs are considerably lower.

Trinidad and Tobago, lying off the northeast coast of Venezuela, grow more than 75 percent of the British West Indian cacao. The crop represents about 90 percent of their agricultural income. It is grown on both large estates and small peasant holdings, and the farms, ranging in size from less than 5 to over 1,000 acres, are usually well cared for.

Cacao acreage in this region has shown an almost continuous decline in recent years. The 1937-38 area was 185,000 acres, as compared with nearly 215,000 in 1931-35. Largely as a result of plant disease, the average yield per acre has decreased during the past decade from about 250 to a low of 134 pounds in 1935-36. Estimates of domestic consumption are not available, but by far the greater part of the crop is exported.

The trend in cacao exports from the British West Indies has followed the downward trend in production. From a level of 73 million pounds between 1926-1930, exports decreased by 50 percent in 1937; the loss was recovered partly in 1938, however, with a volume of 58 million. The United States has been the leading market, taking approximately a third of the annual exports. Important shipments have also been made to the United Kingdom and Canada.

There is a considerable importation of raw cacao into Trinidad, principally from Venezuela. Most of this is reexported to the United States, the United Kingdom, and Canada.

TABLE 11.-*Cacao exports from British West Indies to principal markets, averages 1926-1930, 1931-1935; annual 1936 to 1938*

COUNTRY OF DESTINATION	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
United States	35.0	21.2	17.4	12.8	18.8
United Kingdom	9.3	9.2	5.7	8.6	8.6
Canada	6.0	12.1	9.5	7.2	14.6
Others	23.1	17.3	9.3	10.3	16.4
Total, excluding reexports from Trinidad	73.4	59.8	41.9	38.9	58.4
Total, including reexports from Trinidad	82.1	68.5	51.8	48.5	66.6

International Yearbook of Agricultural Statistics and official sources.

COSTA RICA

Cacao was of minor importance in Costa Rica until recent years, when its cultivation on abandoned banana plantations was undertaken, largely with the aid of foreign capital. The area under cacao has increased considerably, and a limited expansion may continue.

Except for a small irrigated section on the Pacific Coast, practically all the cacao areas are in the Limon district along the Atlantic Coast. Most of the crop is produced on large plantations, but there are also numerous small holdings. The main harvest takes place in May and June; the second in October and November. The average yield per acre is generally considered to be high, and much of the cacao produced is of fine quality.

PANAMA

In Panama production of cacao has increased from 7 to nearly 13 million pounds during the past decade. This expansion was brought about largely through extensive plantings on abandoned banana plantations. The soil, climate, and growing conditions are generally favorable, except for periods of heavy rainfall when artificial drying methods are necessary.

Contrary to the practice in most cacao-producing countries, harvesting in Panama occurs at short intervals of from 3 to 5 weeks. Improvements in the yield and quality of the bean have been brought about through better cultivation and curing methods developed by the Panamanian experiment stations.

MINOR PRODUCERS OF THE CARIBBEAN AREA

In *Cuba* cacao is primarily a domestic-market crop. Habana manufacturers of chocolate products take approximately 95 percent of the crop, and the surplus is normally shipped to the United States. *Haiti*, with an annual production of between 3 and 4 million pounds, supplies its domestic needs, and exports about 2 million pounds annually. The cacao crop is generally considered of secondary importance.

In the *French West Indies* - Martinique and Guadeloupe - where cacao-growing areas have been replanted with sugarcane, the industry has declined. In recent years production has averaged between 200,000 and 400,000 pounds, much of which has been absorbed in the French market.

Mexico, which was formerly an important source of cacao, now exports comparatively small quantities, and supplements its annual production of between 1 and 2 million pounds with imports from neighboring countries. In *Nicaragua* production reached its highest point in 1936-37, when slightly over a million pounds were produced. The product is of fine quality and is grown principally for export. In *Honduras*, *Guatemala*, and *El Salvador* the cacao industry is of relatively little economic importance.

Asia and Oceania

The cacao production of Asia and Oceania combined, which accounts for less than 2 percent of the world total, is supplied principally by Ceylon, the Netherlands Indies, the New Hebrides, Western Samoa, the Philippine Islands, and New Guinea. Production in the remaining islands of this region is insignificant.

Cacao has been cultivated in *Ceylon* since about 1872. About 1907, when production was at its highest, interest in rubber cultivation began to divert attention from cacao. During the past decade about 6 to 8 million pounds have been harvested annually. The present area planted to cacao is estimated at 34,500 acres, with an annual yield per acre of about 223 pounds. Most of the crop, which is of fine quality, is exported. The United Kingdom, the Philippine Islands, and the United States have been the leading markets.

The *Netherlands Indies* produce a high grade of cacao. The annual harvest has been nearly constant since about 1900, reaching its highest volume of over 3.7 million pounds in 1936–37. Most of the crop has been purchased by the Netherlands.

The *Philippine* cacao industry has developed slowly, despite the possibilities which the Islands afford. During the past 10 years annual production has averaged less than 2 million pounds, and the yearly consumption of nearly 7 million pounds must be supplied partly through import. *Western Samoa*, with limited available acreage, produces a choice quality of cacao. During the past 10 years production in the *New Hebrides* has averaged between 2 and 4 million pounds, most of which is shipped to Australia.

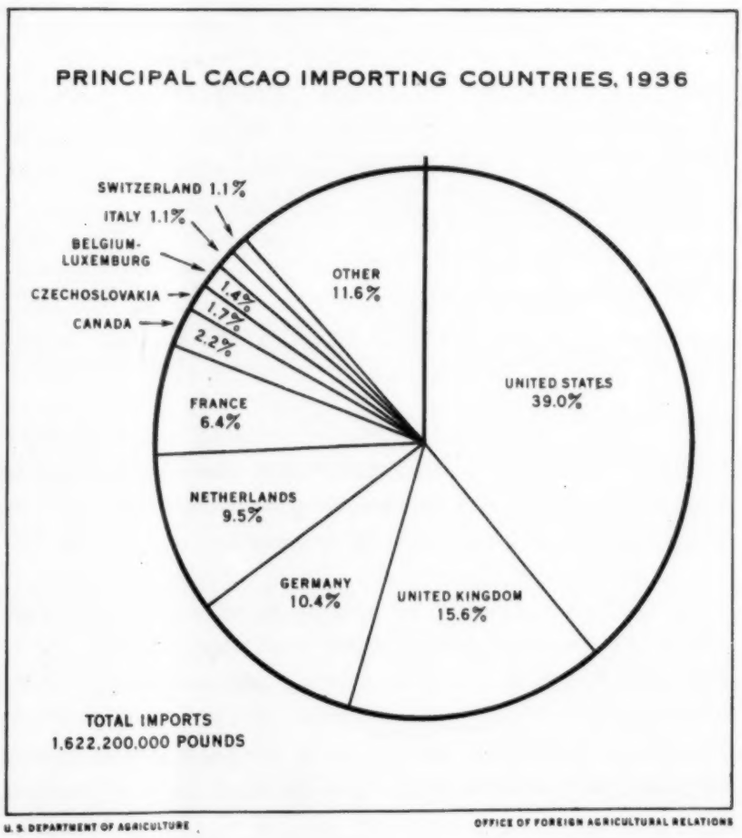

Figure 7.

PRINCIPAL CACAO IMPORTING COUNTRIES

The greater part of the world cacao supply has been absorbed in increasing quantities by the United States, the United Kingdom, Germany, and the Netherlands, whose combined imports in recent years have accounted for about 75 percent of the total. France has also been a relatively important consumer. The United States

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alone takes approximately 40 percent. Europe, including the United Kingdom, has annually consumed over half the total, with most of the countries of western Europe participating in the trade. South American imports have amounted to only about 1 or 2 percent of the total, and Canada has purchased about 1.5 percent. Cacao imports into the remaining markets have been comparatively insignificant.

TABLE 12.—*Imports of cacao into principal importing countries, averages 1926-1930, 1931-1935; annual 1936 to 1938*

COUNTRY	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
United States	422.3	483.5	631.9	619.1	453.1
United Kingdom	144.9	172.9	252.9	212.5	294.6
Germany	161.2	184.6	168.9	162.6	175.4
Netherlands	116.7	120.6	154.0	123.0	169.5
France	78.0	92.7	104.5	91.5	93.5
Belgium-Luxemburg	17.3	20.6	22.4	22.0	24.7
Czechoslovakia	16.3	22.6	26.8	22.5	22.8
Italy	16.1	19.0	17.9	17.2	20.2
Switzerland	17.1	16.8	17.5	14.6	20.3
Canada	16.6	20.2	35.8	24.6	23.6
Others	139.8	156.1	189.6	186.5	227.2
Total	1,146.3	1,309.6	1,622.2	1,496.1	1,524.9

International Yearbook of Agricultural Statistics and official sources.

The increasing world supply of raw cacao during the past 30 or 40 years resulted in expansion of activity of established manufacturers and exporters of chocolate products and stimulated manufacture in countries formerly depending largely on imports. The greatest expansion occurred in the United States.

When received by the manufacturers the raw cacao beans are ready for roasting, after which they are cracked and the kernels or "nibs" are separated from the shells. The roasted nibs, constituting approximately 85 percent of the weight of the bean, contain about 50 percent fat, which when expressed is known commercially as cocoa butter. Both nibs and shells contain small quantities of theobromine, used for medicinal purposes and in the manufacture of caffeine.

Cacao mass, or chocolate liquor as it is known to the trade, is obtained by prolonged grinding of the nibs, resulting in a plastic fluid that solidifies on cooling. Cocoa powder is obtained from the cocoa press cake remaining after the butter has been removed (in varying proportions) from the chocolate liquor by means of hydraulic pressure or by chemical or other processing.

Cocoa butter is used in pharmaceuticals and toilet preparations, but by far its greatest use is in the manufacture of chocolate confections. Because of the demand for chocolate products rich in cocoa butter, the amount consumed in their

manufacture normally exceeds the supply obtained from the manufacture of cocoa powder requiring the processing of cacao nibs mainly for the butter they contain.

United States

The United States depends almost entirely on foreign sources for its cacao requirements. None is grown on the mainland and only small quantities are available from the insular possessions.

During the past 30 years, when the cocoa and chocolate industry made remarkable progress in the United States, there was a shift in the sources of supply. In the period immediately preceding 1914 nearly half of our annual imports were obtained from the Caribbean area, but by 1939 that proportion had dropped to a little over one-eighth. In the meantime Africa's share rose from less than 1 percent to over 50 percent. South America, which has continuously been an important source, supplying between 30 and 40 percent, furnished over 45 percent in 1938. The increase consisted principally of larger shipments from Brazil.

Imports from European countries (principally reexports from Portugal, the United Kingdom, and Germany) have practically ceased as a result of the increase in direct purchases from production sources. Table 13 indicates the trend in United States cacao imports by country of origin, from 1910 to 1939. During this period reexports have amounted to about 3 percent of imports.

TABLE 13.--*United States imports of raw cacao by country of origin, averages 1910 to 1935; annual 1936 to 1939*[1]

COUNTRY	5-YEAR AVERAGE					1936	1937	1938	1939
	1910-1914	1916-1920	1921-1925	1926-1930	1931-1935				
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Brazil	17,128	63,808	61,782	89,797	148,684	196,168	184,601	185,405	203,805
British West Africa:									
Gold Coast	(2)	(2)	(2)	(2)	129,757	200,163	190,955	79,423	169,281
Nigeria	(2)	(2)	(2)	(2)	44,994	59,773	96,884	54,383	120,727
Others	(2)	(2)	(2)	(2)	1,241	1,926	4,251	3,024	7,094
Total	9	81,130	116,973	151,037	175,992	261,862	292,090	136,830	297,102
Dominican Republic	24,819	47,590	45,586	45,396	46,326	37,723	37,935	53,583	56,746
French Africa[3]	(4)	870	111	2,111	18,634	29,923	36,510	26,019	49,520
Ecuador	19,121	56,702	36,288	17,708	12,730	11,344	12,612	8,439	13,818
Venezuela	4,719	16,235	19,159	15,774	17,106	12,213	14,875	10,067	13,662
British West Indies[5]	36,118	43,271	39,207	39,938	24,702	22,438	17,844	20,557	9,382
Panama	66	1,137	3,801	5,991	11,145	8,646	10,980	4,178	7,531
Costa Rica	95	1,654	2,789	4,620	4,681	4,834	1,754	598	3,466
Others	39,724	30,801	39,152	49,891	23,525	46,733	9,850	8,421	8,747
Total quantity	141,799	343,198	364,848	422,263	483,525	631,884	619,051	453,097	663,779
Reexports	5,299	25,274	17,489	13,088	9,135	24,409	22,689	11,930	22,430
Net imports	136,500	317,924	347,359	409,175	474,390	607,475	596,362	441,167	641,349
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Total value	16,009	45,713	31,329	45,497	21,507	33,026	52,331	20,139	27,613
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Average price per pound	11.3	13.3	8.6	10.8	4.4	5.2	8.5	4.4	4.2

[1] Cacao beans and shells; classified separately in 1939. [2] Not shown.
[3] Largely the Ivory Coast and French Cameroons. [4] Less than 500 pounds. [5] Largely Trinidad.
[6] Totals do not include shipments received from Puerto Rico, which between 1935 and 1939 averaged 61,700 pounds valued at $8,271.
Compiled from *Foreign Commerce and Navigation of the United States.*

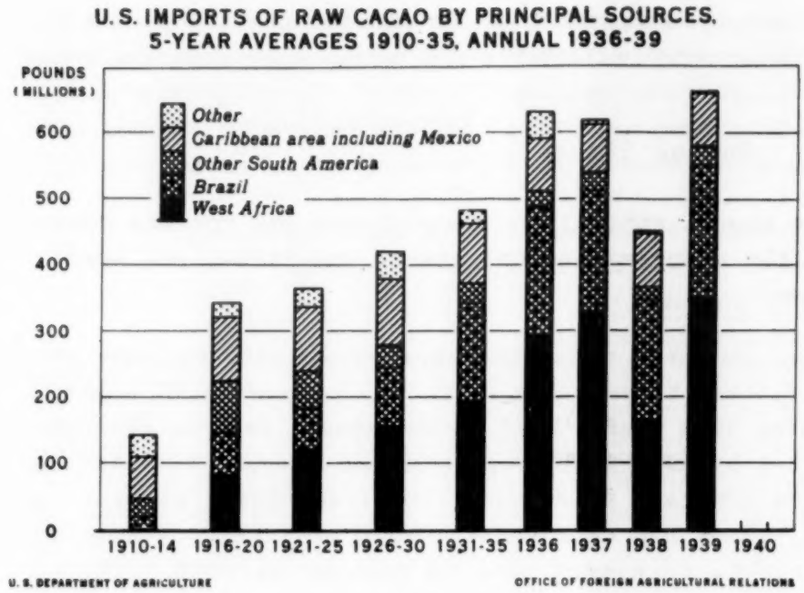

Figure 8.

Except for 1936 and 1937, when larger shipments were received from the Gold Coast, Brazil has been the leading source; however, except for 1938, imports from all British West Afica since 1918 have exceeded those from Brazil. Ranking after these sources, but with a much smaller volume, are the Dominican Republic, French West and Equatorial Africa, the British West Indies - principally Trinidad and Jamaica - Venezuela, Ecuador, and Panama.

The increase in imports of raw cacao into the United States is indicated in the following tabulation:

	1,000 pounds		*1,000 pounds*
20-year average:		1921-1930	353,555
1821-1840	3,037	5-year average:	
1841-1860	2,413	1931-1935	483,536
1861-1880	3,985	1936	631,884
1881-1900	20,018	1937	619,051
10-year average:		1938	453,097
1901-1910	85,047	1939	663,779
1911-1920	250,863		

According to the Census of Manufactures the value of cocoa and chocolate products, not including confectionery,[5] manufactured in the United States between 1925 and 1937 averaged over 96 million dollars annually, reaching a value of over 119 million dollars in 1929. The previous high occurred in 1919, when factory output was valued at over 139 million dollars. The domestic market has absorbed the major portion. Exports of locally manufactured chocolate products, including cocoa butter, averaged about $800,000 during the 10 years preceding 1939. There was a sharp rise in 1939 to over 2 million dollars, most of which represented exports of cocoa butter.

United Kingdom

The United Kingdom now ranks second among the major importers of raw cacao, having passed Germany in 1935. Its importance as a consumer is shown by the fact that the 1938 imports of over 294 million pounds were more than double the average of a decade earlier. Except for small quantities used mainly for flavoring purposes, most of the supply has come from Empire countries, principally British West Africa.

[5] This industry, for census purposes, embraces establishments engaged primarily in the manufacture of chocolate, cocoa, cocoa butter, and other products of the cacao tree. It does not include the manufacture of confectionery, but does cover the chocolate departments operated by confectionery manufacturers for the production of coatings for their own use.

TABLE 14.—*United Kingdom imports of cacao, averages 1926-1930, 1931-1935; annual 1936 to 1939*

SOURCE	AVERAGES		1936	1937	1938	1939[1]
	1926-1930	1931-1935				
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
British countries[2]	136.4	164.5	241.7	204.2	280.2	236.8
Foreign countries	8.5	8.4	11.2	8.3	14.4	5.6
Total gross imports	144.9	172.9	252.9	212.5	294.6	242.4

[1] January-August; preliminary.
[2] About 90 percent from British West Africa.
Compiled from official sources.

The United Kingdom reexports some raw cacao, but in recent years the volume has been relatively small. Almost the entire increase in imports, as well as between 15 and 20 million pounds of imported cacao butter, has been absorbed by the growing domestic market. The demand has been largely for eating chocolate, and consumption of cocoa powder and drinking chocolate is said to be declining.

Germany

Germany, third among the leading importers of raw cacao, held second place from about 1901 to 1935. Except for a few years the volume was maintained at approximately the same level for about 15 years. The 1938 total of 175 million pounds about equaled the previous high averages for 1921-1925 and 1931-1935.

TABLE 15.—*German imports of cacao, averages 1926-1930, 1931-1935; annual 1936 to 1938*

SOURCE	AVERAGES		1936	1937	1938
	1926-1930	1931-1935			
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
British West Africa	120.2	154.2	123.1	113.2	83.3
Brazil	11.3	9.3	21.8	2.4	23.4
Ecuador	6.3	4.8	8.3	20.9	25.2
Venezuela	3.4	1.8	1.9	4.4	12.9
Portuguese West Africa	9.3	5.7	5.8	5.2	4.5
Others	10.7	8.8	8.0	16.5	26.1
Total	161.2	184.6	168.9	162.6	175.4

Compiled from official sources.

Before 1936 about three-fourths of Germany's cacao supply was drawn from British West Africa. During the past few years, however, imports from the Gold Coast have declined and those from Ecuador, Brazil, Venezuela, and Costa Rica have substantially increased. Shipments from Brazil were heavy in the early part of 1939 but declined during the remainder of the year. Imports from Costa Rica, which between 1931 and 1935 averaged 230,000 pounds annually, rose to over 4 million in 1937, 5 million in 1938, and to nearly 3 million during the first 5 months of 1939.

Trade reports indicate an increase of about 40 percent in German consumption of cacao between 1935 and 1937, with factory demand generally exceeding available stocks. Dresden has been the center of the cocoa and chocolate industry. A large proportion of the output has been consumed in the domestic market, the relatively small quantities exported going principally to the Netherlands and Denmark.

The Netherlands

The Netherlands has been among the foremost cacao markets for over half a century, and is now the fourth largest importing country.

During the past decade between 75 and 80 percent of the cacao requirements were obtained from British West Africa. In 1939 French West Africa, which previously had furnished less than 9 percent, increased its share to nearly 16 percent. Small quantities of high-grade cacao have been obtained from the Netherlands Indies.

TABLE 16.–*Netherlands imports of cacao, averages 1926-1930, 1931-1935; annual 1936 to 1939*

SOURCES	AVERAGES		1936	1937	1938	1939
	1926-1930	1931-1935				
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
British West Africa	88.8	94.4	121.0	97.8	143.7	122.9
French West and Equatorial Africa	.6	6.0	13.6	10.7	16.7	26.3
Portugal	5.8	4.3	3.5	1.1	1.7	5.3
São Tomé and Principe	(1)	.7	2.2	1.5	1.2	2.1
Brazil	5.6	6.7	7.4	3.1	2.0	2.0
Others	15.9	8.5	6.3	8.8	4.2	6.8
Total	116.7	120.6	154.0	123.0	169.5	165.4

[1] Not shown.
Compiled from official sources.

The Netherlands cacao industry has depended largely on its foreign trade. Cocoa butter has been an important item in recent years, exports totaling over 53 million pounds in 1938. Normally about one-third of these exports has been purchased by the United Kingdom and one-fifth by Belgium.

France

With the exception of the United Kingdom, France is the only important cacao-consuming country with large colonial areas suitable for the cultivation of this crop. Over 90 percent of cacao imports into France have been obtained from the French African colonies, principally from the Ivory Coast, whose production alone has exceeded the consumption needs of France.

Minor Cacao-Consuming Countries

Of the lesser cacao-consuming countries, *Canada*, *Czechoslovakia*, and *Italy* have shown the greatest increase in demand during the past decade. Imports into Canada, averaging 16.6 million pounds between 1926 and 1930, rose to 35.8 million in 1936, and were supplied largely by the British West Indies, the Gold Coast, and Ceylon, and by reexports from the United States. Most of the raw cacao shipments into Czechoslovakia entered through the free port of Hamburg. Italian imports have been received principally from Brazil, the Gold Coast, and Portuguese Africa.

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TRADE AGREEMENTS AND AGRICULTURAL FOREIGN TRADE . . . . .

By Ellis M. Goodwin*

Exports of United States agricultural products have been increased materially as a direct result of the reciprocal-trade-agreements program. Of the total value of United States foreign trade in agricultural products in the past 4 years, exports amounting to at least 100 million dollars and imports of about 20 million dollars are directly attributable to the agreements. In addition to direct benefits, the agreements have expanded the domestic market for agricultural products and have yielded other indirect benefits to United States farmers.

An analysis of foreign trade statistics from January 1, 1936, to the outbreak of the European War gives tangible evidence that the reciprocal trade agreements added many million dollars to farm income in the United States. Since September 1939, control measures arising out of the war have interfered with the operation of the trade agreements. The success of the program, however, even in the unsettled period immediately preceding the war, suggests the soundness of its principles as a basis for expanding the peacetime agricultural trade of the United States with nations having compatible trade policies.

In addition to the direct benefits to agriculture of the trade agreements, the indirect effects are of far-reaching importance. The program is essentially one of economic expansion. Increased imports into the United States make exchange available to foreign customers for the purchase of agricultural commodities produced most advantageously in the United States; increased sales of industrial products to trade-agreement countries stimulate industrial activity and domestic purchasing power for farm products; and prices of imported products purchased by farmers are lowered by concessions in the United States duty on those products. The extent to which these and other indirect effects of the program promote farm prosperity cannot be accurately measured, but such benefits are undoubtedly substantial and might be considered sufficient justification for trade agreements even if direct benefits could not be shown.

The present study attempts to measure the direct value of the program as affecting the income of the American farmer, through the expansion of United States foreign trade in agricultural products. The agreements have expanded United States agricultural exports much more than imports, and the moderate expansion of agricultural imports has been of such a nature as not to injure American farmers. In fact, a major weakness of the program has been that imports, particularly of industrial products, have not shown a greater increase.

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METHOD OF ANALYSIS

The principal problem in measuring the direct effects of the agreements was to devise a formula that would separate the effects of reductions in import duties from the effects of other factors influencing trade.

The formula used for calculating export gains assumes that in the absence of any change in the customs treatment afforded by foreign importing countries, United States exports of a commodity to a group of countries would have increased or decreased, between the pre-agreement and post-agreement periods, in the same proportion as would United States exports of the same commodity to the remaining countries. Any proportionately larger increases (or smaller decreases) in exports of a commodity to the countries granting more favorable treatment than to those leaving customs treatment unchanged have been credited to the effects of the improved treatment.[1] This assumption is based on the fact that the supply situation is the same for all purchasers. It does not take into account differences other than trade-barrier changes in the foreign demand situations. It is more valid for commodities whose demand tends to remain relatively stable, such as most grains, than for commodities whose demand fluctuates greatly. In a few cases, the formula was obviously inapplicable because of the great influence of factors other than the improvement in customs treatment.

In calculating import gains it was not possible to use the same formula as in the case of exports, because practically all supplying countries (except Germany and, for a short time, Australia) received the benefit of reductions in United States duties. Hence a comparison as between different supplying countries would not be significant. A comparison between different commodities might be made, however, since the largest factor in determining United States imports is usually the level of domestic purchasing power and demand. Since imports of supplementary (or competitive) farm products not affected by the agreements rose 20 percent between the pre-agreement and post-agreement periods studied, it might be reasonable to attribute to the effects of tariff reductions only that part of the increased imports of affected items which is greater than 20 percent. Instead, however, all increases in imports of commodities on which United States duties were reduced are assumed to have resulted from the tariff concessions. As with exports, of course, certain imported commodities were clearly influenced by other important factors separately considered.

EFFECTS OF THE PROGRAM

During the post-agreement period beginning January 1, 1936,[2] exports of almost all important farm commodities to the foreign markets granting them improved treatment

[1] Data covering agreement countries' imports from the United States (compiled by the Bureau of Foreign and Domestic Commerce) were used wherever possible and results checked against corresponding United States export data. Statistics of United States exports show country of destination declared by the exporter; frequently, however, this is not the ultimate destination.

[2] This date corresponds fairly closely to the time when most of the agreements went into effect. In the case of the agreements with Cuba (effective Sept. 3, 1934) and Finland (effective Nov. 2, 1936), adjustments in the calculations have been made in the detailed comparisons by commodities and by countries to correct for the time discrepancy. All other agreements affecting agricultural exports to an important extent during the period were in effect at least 2½ years of the 3-year post-agreement period.

fared better than did United States exports of the same commodities to the foreign markets giving no benefits. Exports of at least 100 million dollars' worth of farm products[3] over the period have been attributable to the immediate effects of the agreements.

Commodities benefiting were typically those burdened by heavy domestic surpluses, particularly wheat and other grains, lard and pork products, citrus fruits and fresh apples, fresh vegetables, canned fruits, and nuts. The Canadian and Cuban agreements accounted for more than 60 percent of the gains. Of the general rise in exports of agricultural commodities other than cotton during 1936-1939 to the 17 countries[4] with which trade agreements were in effect during most of the period, at least 40 percent is attributable directly to advantages received by American farmers under the trade-agreements program.

With respect to imports, the increase from the pre-agreement to the post-agreement period in all supplementary farm products benefiting by duty reductions was less than 20 million dollars. Moreover, the agricultural products that have enjoyed reduced duties and consequently have entered in greater volume have consisted chiefly of commodities that we do not produce ourselves, or of commodities whose volume of import trade is small in relation to our own production. In a number of cases, too, increased imports have been balanced by much greater gains - also made possible by the trade-agreements program - in exports of the same or related commodities.

EXPORTS

During the 3-year post-agreement period extending to January 1, 1939, the value of the export trade in those farm products receiving more advantageous treatment under the trade agreements averaged 64.2 million dollars annually.[5] The export trade in the same products in a comparable pre-agreement period (1934 and 1935) averaged only 37.4 million dollars annually. Exports of these farm commodities to countries where they received concessions under the agreements, therefore, increased in value in the post-agreement period by 72 percent. In the same periods, exports of these commodities to countries that did not grant concessions rose by only 12 percent. The wide spread between a 72-percent rise for exports receiving better trade treatment and a 12-percent rise for exports receiving no benefits under the agreements - even if considerable leeway were to be allowed for other influences on trade figures - indicates that the agreements have been effective in expanding farm exports.

[3] Export gains are the minima which appear to have been realized on the basis of the method of analysis used. More detailed examination of the data might give a larger figure for export gains (see Appendix, table 4, note 7).

[4] Belgium, Brazil, Canada, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Finland, France (including colonies, dependencies, and protectorates other than Morocco), Guatemala, Honduras, Haiti, the Netherlands, Nicaragua, Sweden, and Switzerland. Cotton is omitted from these comparisons because (except in Germany) few foreign-trade barriers were imposed against it, and therefore substantial direct concessions could not be obtained under the agreements. Hence it would be incorrect to attribute the increase in cotton exports to the direct effects of the agreements.

[5] Not including United States exports of cacao beans, spices, coffee, and similar commodities, originally obtained from foreign sources, totaling about 1 million dollars in 1937; and approximately 150 items, individually of negligible importance, having an aggregate value of about 1.5 million dollars in 1937.

Exports of the products that did not appear to benefit from concessions were influenced by factors tending to offset the effects of the agreements. In the case of leaf tobacco and canned asparagus, France was a leading market among the agreement countries. France, however, was experiencing economic and political difficulties that kept business activity and purchasing power at a low level during the post-agreement period; consequently there was a general decline in imports from the United States. Exports of fresh fruits other than apples, oranges, and grapefruit declined, chiefly because of smaller Canadian purchases during the economic recession of 1938. The group consisting of fresh and dried vegetables shows a slightly smaller increase in exports to countries giving better trade treatment than to countries giving no concessions, but in this case less significance should be attached to the comparison since trade in these products with countries giving no concessions is negligible.[6]

Calculations have been made, by individual commodities or by fairly small groups of commodities, of export gains attributable to the agreements. As an example, exports of fresh apples to the five important foreign markets according better treatment to American apples increased by 26 percent in the post-agreement period, whereas exports of fresh apples to all other countries declined by 30 percent. In the absence of the agreements it would be expected that our total exports of apples to the five countries, averaged over representative pre-agreement and post-agreement periods, would have followed a course very similar to that of our exports to the other countries. Exports to these five countries increased in average annual value from $3,950,000 in the pre-agreement period to $4,950,000 in the post-agreement period, whereas if they had followed the course of exports to other countries they would have declined 30 percent from the pre-agreement figure, or to $2,765,000. This would indicate that apple concessions in trade agreements were responsible for additional exports valued at more than 2 million dollars a year.

The analysis also shows detailed gains by commodities and by countries. Thus France, the Netherlands, Sweden, Canada, and Finland (the more important markets) accorded better treatment to United States apples, and each increased its purchases in the post-agreement period. Purchases by Canada rose by 194 percent, but on small volume, whereas purchases by France rose 21 percent on large volume. By applying the present method to data for each of the five countries, the following gains were estimated over exports expected on the basis of sales in "nonconcession" markets:[7]

Country of destination:	*1,000 dollars*
France	3,200
Sweden	1,100
Netherlands	900
Canada	400
Finland	600
Total	6,200
Annual average	2,067

[6] There was a flat increase in our sales to Canada of fresh vegetables other than potatoes, amounting to an annual average of $1,421,000. This amount has been used in subsequent calculations, since "other country" purchases of United States fresh vegetables are not large enough to be representative. This is the only important instance where representative figures are not available to show how farm exports to countries giving better trade treatment performed in relation to exports of the same commodities receiving no benefits.

[7] This example illustrates one of the few cases where data needed had to be supplied from partly estimated figures. Available French import statistics group apples and pears together; therefore it was necessary to use United States export data for pears in order to estimate the portion of the French import totals consisting of apples.

By making similar comparisons by individual commodities, taking each country separately and adjusting trade with Cuba and Finland to allow for post-agreement periods substantially different from the 3-year period used for the other countries, the total increase in farm exports attributable to trade-agreement concessions in the calendar years 1936-1938 amounts to 90.1 million dollars. The distribution of this amount by commodity groups and countries of destination to January 1, 1939, was as follows:[8]

Country of destination:	*1,000 dollars*	Commodity:	*1,000 dollars*
Canada	28,300	Grains and preparations	40,400
Cuba	27,600	Fruits and preparations	23,100
Netherlands	16,400	Animal products (chiefly lard and pork)	14,400
France	7,200	Vegetables and preparations	5,700
Switzerland	4,500	Vegetable oils and oilcake	3,500
Belgium	2,200	Others (chiefly nuts, hay, prepared milks)	3,000
Sweden	2,000		
Others	1,900		
Total	90,100	Total	90,100

It is true that there are factors other than trade-agreement concessions that may have operated to increase our exports to these countries in this period. It must be remembered, however, that these other factors operate in both directions and tend to offset one another, especially since many items are involved. The important trade concessions that we have obtained in each agreement are designed to admit a greater volume of the trade affected, and the present statistics indicate that they usually accomplish their purpose. The fact that for most of the commodities affected trade with the benefit-granting countries has consistently expanded more rapidly (or has contracted less) than trade with other countries leaves little doubt that the agreements have been the major factor in bringing about the differences.

Data for 1939 have not yet been worked out in sufficient detail to permit a clear appraisal of recent trade agreement results, but there is evidence that export gains in 1939 up to the outbreak of the war, calculated on the basis already described, will raise the total figure of 90 million dollars at January 1, 1939, to 100 million and probably higher. Although wartime trade dislocations have checked trade agreement benefits in many cases, particularly those expected from the new agreement with the United Kingdom, most of the important commodities benefiting from the agreements continued to move in good volume up to the outbreak of hostilities.

In summary, agricultural exports other than cotton to countries with which agreements were in effect during the greater part of the last 4 years rose in value from the 1935 level by 250 million dollars, or by 70 percent. Of this increase, at least 100 million dollars, or 40 percent, may be traced to the measurable direct effects of trade agreement concessions obtained by the United States.

IMPORTS

As in the case of exports, distortion of the trade figures by factors ohher than a lower tariff complicates the determination of gains in agricultural imports attributable to duty reductions accorded under the trade agreements. Thus fluctuations

[8] Details are given in the Appendix, table 4, p. 76.

in crop production and changes in economic conditions at home and abroad have affected our import trade. These factors have been taken into consideration in estimating the extent to which lower duties produced greater imports.

The value of sugar imported from Cuba constitutes more than half the total value of farm imports on which duties were reduced in the agreements. Sugar imports are subject to quantitative restrictions, set with the object of reserving for producers in this country as much of our domestic market as they can supply at reasonable prices. Under these restrictions the value of sugar imports was lower in the post-agreement than in the pre-agreement period. This item, therefore, should be disregarded; otherwise the total figures for duty-reduced imports, when assembled by pre- and post-agreement averages, produce results entirely misleading.

Sugar imports declined in value because of lower sugar prices in 1937 and 1938, and because of reduced quotas. A number of other agricultural imports on which duties were reduced by the agreements also failed, for a number of reasons, to increase in comparison with the pre-agreement average. This group includes imported vermuth, fresh vegetables, fresh limes, garden and field seeds, flax, and work horses. Like sugar, these items should be disregarded.

Complementary (noncompetitive) farm imports duty-reduced by the agreements should also be deducted from the totals, since farmers are interested in them as consumers only. These products consist of vanilla beans, cocoa, chocolate, and a number of items in the group of essential and distilled oils. Altogether, duty-reduced complementary imports were valued at an average of $4,111,000 during the 3 post-agreement years ending June 30, 1939, increasing by $1,837,000, or 81 percent, from the corresponding average for the previous 2 years.[9] This increase is of little significance so far as United States agriculture is concerned, since the commodities affected are not produced in this country and are not substituted to any important extent for United States farm products.

The following tabulation shows post-agreement increases in supplementary farm imports duty-reduced by trade agreements.[10] The figures represent the increase in average yearly imports in 3 post-agreement years ending June 30, 1939,[11] over average yearly imports in 2 pre-agreement years.

	1,000 dollars
Commodities supplying a domestic deficiency:	
Cattle	3,900
Poultry	400
Total	4,300
Imports of benefit to farmers:	
Grass-seeds	2,400
Seed potatoes	600
Hay	200
Total	3,200

[9] Appendix, table 8, p. 80.

[10] Where commodities were not separately classified, estimates have been used.

[11] Agreements were in effect throughout the post-agreement period with Cuba, Belgium, Haiti, Sweden, Brazil, Canada, the Netherlands, Switzerland, Honduras, Colombia, Guatemala, and France. Imports affected by later agreements, including that with the United Kingdom, are not considered, since either the volume of trade involved was small or the duty reductions were not in operation long enough to have an important effect. No adjustment has been made for the fact that the Cuban agreement was in effect throughout the greater part of the pre-agreement period because no significant change in the figures would result.

	1,000 dollars
Foreign specialties:	
Champagne and wines	1,100
Fancy cheeses (Swiss, Gruyere, Edam, etc.)	1,100
Food specialties (endive, pickled onions, canned peas, canned mushrooms, candied chestnuts, candied fruits, maraschino cherries)	200
Wrapper tobacco	200
Total	2,600
Others:	
Exotic commodities (pineapples, Brazil nuts, and castor beans)	3,000
Broken rice, maple sugar, cheddar cheese, edible gelatin, tulip bulbs, blueberries, poppy seeds, turnips	3,400
Minor items (20)	400
Total	6,800
Total supplementary import increases[1]	16,900

[1] After eliminating import decreases.

As shown in the above tabulation, after eliminating the items already mentioned there remained an increase of 16 million dollars in average annual imports of items affected by the agreements. Of this, not more than 5 million dollars' worth of commodities competing to any appreciable extent with American farm products should be considered as the direct result of lower duties. Against this relatively small volume of import trade, the comparable direct return in exports has been at least 25 million dollars per year. The allowances made in reaching the 5-million-dollar figure mentioned above are shown in table 7 of the Appendix, page 80.

Factors other than the duty reductions were responsible for the greater part of the increases in imports under the trade agreements. For example, increased quantities of cattle and poultry were supplied by Canada largely because of a temporary meat shortage and high meat prices in the United States from 1936 to 1939. Under the trade agreement with Canada the duty reduction on beef cattle was limited to a tariff quota of 155,799 head in any calendar year. The United States demand for Canadian cattle, however, was so great during most of the post-agreement period that imports were brought in at the full pre-agreement rates of duty after the duty-reduced quotas were exhausted. This indicates that the total volume of imports was little affected by the reductions.

The effect on prices of Canadian cattle arrivals at a local market is no different from the effect of domestic cattle arrivals. By far the greater part of the figure measuring increased cattle imports, therefore, represents increased trade attributable to conditions outside the influence of the trade agreements. Nevertheless, to reflect the possible pressure on domestic prices of Canadian cattle arrivals, 1 million dollars of the 4-million-dollar increase has been attributed to the effect of the duty reductions.

Nearly half of the increase in pineapple imports is accounted for by much greater shipments of duty-free canned pineapples from the Philippine Islands. Cuban sales of pineapples in the American market did not respond markedly to the preferential duty reductions accorded by the United States. Brazil nuts were imported in greater quantity chiefly because of stronger American demand for nuts of this type, as indicated, for example, by a large increase in imports of cashew nuts on which duties were not reduced. Castor beans compete only indirectly with domestic oilseeds,

and the substantial increase in their imports is therefore of little significance to American agriculture. Greater imports of grass-seeds, seed potatoes, and hay have helped the farmer since they have tended to prevent prices for these commodities from rising to famine levels when supplies from domestic sources have been inadequate.

The foreign food and beverage specialties listed do not compete directly with similar domestic products. For the most part they are high-priced luxury products, appealing to limited groups of consumers and sold on the strength of brand names, established reputation, exclusive processes of manufacture, or control of sources of supply. A cheaper franc during the post-agreement period accounts for much of the increase in imports of French wines and cheese, although lower duties were also a factor. Greater imports of Sumatra wrapper tobacco occurred because tobacco dealers in the Netherlands shifted stocks to this country following a war scare.

The final group, which includes broken rice, maple sugar, cheddar cheese, gelatin, tulip bulbs, blueberries, poppy seeds, and turnips as the principal items, is the only group of commodities which may have represented substantial competition with similar American products. None of the average increases in this group amounted to more than $700,000 a year, and in certain cases (rice, for example) greater imports were offset by much larger amounts of the same or related farm products exported through trade concessions obtained under the agreements. Maple sugar imports from Canada supplement inadequate domestic supplies, particularly of the cheaper grades used for flavoring tobacco.

Cheddar cheese imports increased by an annual average of $600,000, but the increase coincided with high prices for cheddar in the domestic market, making it evident that greater imports were due to higher prices rather than to lower duties. Post-agreement imports of cheddar cheese have not amounted to more than about 2 percent of domestic production of cheddar. In this respect cheddar cheese is typical of many of the items listed, in that domestic production is so much greater than the small volume of increased imports that there manifestly could have been no measurable effect so far as competition is concerned.

In fact, increases in agricultural imports resulting from the trade-agreements program have been so slight that from a broad national viewpoint it might be said that the program has failed to give as much encouragement to imports as should be given in view of the present exchange situation.

Total exports now far exceed imports, and if we expect payment for any substantial part of these exports, our imports must be greatly increased. Full repayment for wartime exports cannot be expected, but any imports from any country constitute that much repayment we would not otherwise receive. This situation will remain for a long time after hostilities cease, and in the post-war years our exports are likely to be strictly limited by our imports.

Agriculture cannot expect industrial imports to pay for all agricultural exports. Therefore, if agricultural exports are to be maintained, there should be substantial increases in a selected list of agricultural imports. In this connection it should be kept in mind that in past years both the volume of agricultural imports

and total farm income varied with the variations in the consumer purchasing power. In other words, such imports have been largest when farm income is largest. They are a result of high prices and not a cause of low prices. For example, in 1932 when farm income was at the lowest point in recent years, imports of agricultural products were also low, and with returning prosperity agricultural imports and farm income have both increased.

CONCLUSION

The trade-agreements program, from its inception to the time when its benefits were restricted by the war, accounted directly for an expansion of United States agricultural exports amounting to at least 100 million dollars. Duties lowered in exchange for the concessions resulting in this substantial addition to our foreign sales of agricultural products permitted an increase in supplementary agricultural imports of not more than a fifth of that amount.

The indirect effects of the program cannot be accurately measured, but there is reason to believe that they made themselves felt in the form of expanded purchasing power, at home and abroad, resulting from both the agricultural and nonagricultural parts of the program, producing substantial additional underlying gains in trade and in world economic activity.

§

APPENDIX

TABLE 1.—*Imports of concession commodities[1] from the United States into agreement countries*

COMMODITY CATEGORY AND COUNTRY	YEAR ENDED DECEMBER 31							
	PRE-AGREEMENT PERIOD				POST-AGREEMENT PERIOD			
	1933[2]	1934	1935	AVERAGE 1934-1935	1936	1937	1938	AVERAGE 1936-1938
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Live animals:								
Canada		164	136	150	191	222	262	225
Horse meat:								
Netherlands		276	153	215	164	189	259	204
Pork:								
Canada		611	237	424	342	305	621	423
Cuba	(230)	[3] 520	637	[4] 579 (375)	714	666	581	[4] 654 (650)
Belgium		(5)	(5)	-	-	4	31	11
Total		1,131	874	1,003	1,056	975	1,233	1,088
Poultry:								
Canada		61	24	42	19	36	55	37
Lard:								
Canada		158	7	82	18	8	11	12
Cuba	(536)	[3] 1,580	2,738	[4] 2,159 (1,058)	3,323	4,893	3,969	[4] 4,062 (3,731)
Switzerland		154	8	81	220	125	36	127
Belgium		602	36	319	48	46	135	76
Colombia[6]		6	1	4	62	5	250	106
Total		2,500	2,790	2,645	3,671	5,077	4,401	4,383
Prepared milks:								
Brazil		24	24	24	39	49	32	40
Colombia[6]		79	94	86	127	184	257	189
Haiti[6]		13	12	12	21	17	17	18
Honduras[6]		63	57	60	56	45	48	50
Total		179	187	182	243	295	354	297
Dried eggs:								
Canada		13	25	19	67	70	58	65
Oats:								
Canada		2	1	1	97	1,896	2,915	1,636
Rice:								
Canada		[6] 101	83	92	152	137	196	162
Cuba	(110)	9	1,335	[4] 672 (60)	216	3,220	5,175	[4] 2,870 (2,487)
Netherlands		174	130	152	117	277	216	203
Total		284	1,548	916	485	3,634	5,587	3,235
Wheat and wheat flour:								
Canada		[3] 33	[3] 41	37	162	1,507	5,868	2,513
Cuba	[3] (1,090)	[3] 1,350	[3] 1,030	[4] 1,190 (1,220)	797	1,801	2,701	[4] 1,766 (1,582)
Netherlands		1,490	1,601	1,546	3,143	9,413	12,790	8,449
Switzerland		-	-	-	-	1,393	2,932	1,441
Total		2,873	2,672	2,773	4,102	14,114	24,291	14,169
Other grains:								
Canada		[3] 17	83	50	104	146	630	293
Cuba	(59)	[3] 50	[4] 22 (55)	36	25	204	53	[4] 94 (76)
Total		67	105	86	129	350	683	387

[1] Not including the following: (1) cacao beans, spices, coffee, and similar items and products of the United States, totaling about $1,000,000 in 1937; (2) approximately 150 items individually unimportant in value but aggregating about $1,500,000 in 1937; and (3) products benefiting from the agreements with El Salvador, Costa Rica, and Ecuador which were not in operation long enough to have an important effect.

[2] 1933 data were used for Cuba in order to arrive at adjusted averages.

[3] Estimated.

[4] The adjusted averages shown in parentheses are: for Cuba, pre-agreement 1933-1934, post-agreement 1935-1938; for Finland, pre-agreement 1935-1936, post-agreement 1937-1938.

[5] Not available. Probably none.

[6] United States exports.

TABLE 1.—*Imports of concession commodities from the United States into agreement countries*—Continued

COMMODITY CATEGORY AND COUNTRY	YEAR ENDED DECEMBER 31							
	PRE-AGREEMENT PERIOD				POST-AGREEMENT PERIOD			
	1933[2]	1934	1935	AVERAGE 1934-1935	1936	1937	1938	AVERAGE 1936-1938
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Grain preparations:								
Canada		340	321	331	279	387	433	366
Cuba	[3]	4	8	6	8	12	61	27
				[4] (4)				[4] (22)
Sweden		31	39	34	44	49	47	47
Brazil		74	74	74	157	107	99	121
Total		449	442	445	488	555	640	561
Hay:								
Canada		1	2	1	8	267	699	325
Oil cake and meal:[7]								
Cuba	(2)	[3] 2	-	[4] 1	-	19	49	[4] 23
				(2)				(17)
Netherlands		7	7	7	171	165	540	292
Total		9	7	8	171	184	589	315
Dried beans and peas:								
Canada		107	82	94	125	193	175	164
Cuba	(80)	[3] 39	68	[4] 54	141	196	193	[4] 177
				(60)				(150)
Total		146	150	148	266	389	368	341
Fresh vegetables except onions and potatoes:								
Canada		2,634	2,641	2,638	3,500	4,357	4,320	4,059
Cuba	(5)	[3] 2	14	[4] 8	96	178	168	[4] 147
				(4)				(114)
Total		2,636	2,655	2,646	3,596	4,535	4,488	4,206
Potatoes and onions:								
Cuba	(256)	[3] 710	1,134	[4] 922	1,113	820	1,014	[4] 982
				(483)				(1,020)
Canned asparagus:								
Cuba	(7)	[3] 10	22	[4] 16	32	35	29	[4] 32
		[6]		(9)				(30)
France		673	582	627	589	366	113	356
Total		683	604	643	621	401	142	388
Canned vegetables except asparagus:								
Canada		33	38	35	77	69	88	78
Cuba	(3)	[3] 48	67	[4] 58	65	80	80	[4] 75
				(25)				(73)
Switzerland		298	325	311	294	303	178	259
Sweden		1	1	1	3	2	5	3
Brazil		12	12	12	31	15	27	24
Total		392	443	417	470	469	378	439
Fruit and vegetable preparations:[8]								
Canada		100	115	108	245	176	165	195
Cuba	(13)	[3] 31	28	[4] 30	35	34	31	[4] 33
				(22)				(32)
Total		131	143	138	280	210	196	228
Yeast:								
Canada		232	206	219	169	159	152	160

[7] Not including Belgian imports of United States linseed cake averaging $3,428,000 in the pre-agreement period and $4,232,000 in the post-agreement period. This item might be included as having received better trade treatment, since under the agreement the Belgian import license tax was reduced from 10 francs to 7.50 francs per 100 kilos. On the other hand, linseed cake was a duty-free commodity, imports of which into Belgium were regulated by quotas and by other restrictions that were not changed by the agreement, making it probable that the small change in trade treatment had little effect on the volume of imports.

[8] Not including Colombian imports of United States sauces and essences for seasoning, tomato sauce, pickles, canned vegetables, and olives averaging $23,000 annually in the pre-agreement period and about $72,000 annually in the post-agreement period.

TABLE 1.—*Imports of concession commodities from the United States into agreement countries*—Continued

COMMODITY CATEGORY AND COUNTRY	YEAR ENDED DECEMBER 31							
	PRE-AGREEMENT PERIOD				POST-AGREEMENT PERIOD			
	1933[2]	1934	1935	AVERAGE 1934-1935	1936	1937	1938	AVERAGE 1936-1938
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Citrus fruits, fresh:								
Canada		5,430	5,817	5,624	7,004	8,134	6,423	7,186
France		215	912	563	1,329	66	659	684
Belgium		19	13	16	13	1	22	13
Sweden		3	3	3	34	4	15	18
Total		5,667	6,745	6,206	8,380	8,205	7,119	7,901
Apples, fresh:								
Canada		36	95	66	170	250	160	193
Netherlands		946	847	897	1,039	756	1,016	937
France[9]		1,906	2,274	2,090	3,040	1,880	2,687	2,536
Sweden		774	831	802	814	760	1,200	925
Finland[10]		90	90	90 (157)	223	382	478	361 (430)
Total		3,752	4,137	3,945	5,286	4,028	5,541	4,952
Fresh fruits except apples and citrus:[11]								
Canada		2,425	2,454	2,439	3,380	3,279	2,698	3,119
Netherlands		247	229	238	251	146	355	251
France		747	749	748	838	697	610	715
Belgium		8	68	38	204	272	437	304
Sweden		237	241	239	422	376	570	456
Total		3,664	3,741	3,702	5,095	4,770	4,670	4,845
Dried raisins:								
Cuba	(9)	16	17	17 (12)	27	31	30	29 (26)
Netherlands		189	232	211	243	396	805	481
France		200	278	239	398	429	535	455
Sweden		225	303	264	340	450	490	427
Finland		80	132	105 (137)	141	248	257	215 (253)
Total		710	962	836	1,149	1,554	2,117	1,607
Dried prunes:								
Netherlands		428	379	403	360	373	441	391
Switzerland		283	168	226	253	162	214	210
France		1,905	1,795	1,850	2,890	2,065	2,170	2,375
Belgium		382	317	350	319	375	393	362
Finland		163	163	163 (192)	220	287	276	261 (282)
Total		3,161	2,822	2,992	4,042	3,262	3,494	3,599
Dried fruits except raisins and prunes:[12]								
Canada		306	326	316	386	459	371	405
Cuba	(21)	40	47	44 (31)	42	49	49	47 (47)
Belgium		184	206	195	226	308	449	328
Finland		63	63	63 (64)	65	101	114	93 (108)
Switzerland		343	196	269	255	274	198	242
Total		936	838	887	974	1,191	1,181	1,115

[9] Estimate. Available French import statistics group apples and pears together. United States export data for pears were used to estimate the portion of the French import totals consisting of apples.

[10] The trade agreement reduced the duty on fresh apples entering from December 15 to June 15 inclusive. The statistics given here are for January through June, inclusive, and for the following December. For the remainder of the year imports of fresh apples averaged $20,000 annually in 2 pre-agreement years and $23,000 annually in 2 post-agreement years.

[11] Excluding Colombian imports of United States fresh fruits and nuts amounting to $5,000 in 1935 (pre-agreement) and averaging $60,000 annually in the 3 subsequent (post-agreement) years.

[12] Excluding Colombian imports of United States dried fruits (including raisins and prunes) averaging $21,000 annually in the pre-agreement period and $64,000 annually in the post-agreement period.

TABLE 1.—*Imports of concession commodities from the United States into agreement countries*—Continued

COMMODITY CATEGORY AND COUNTRY	YEAR ENDED DECEMBER 31							
	PRE-AGREEMENT PERIOD				POST-AGREEMENT PERIOD			
	1933[2]	1934	1935	AVERAGE 1934-1935	1936	1937	1938	AVERAGE 1936-1938
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Canned fruits:								
Canada		64	76	70	128	123	92	114
Cuba	(28)	104	146	[4] 125 (66)	173	230	220	[4] 208 (192)
Switzerland		[3] 58	38	48	42	44	43	43
France		[3] 43	43	43	131	163	76	123
Belgium		164	181	173	254	381	541	392
Sweden		[3] 87	137	112	150	189	196	178
Finland		[3] 7	7	[4] 7 (10)	12	21	21	[4] 18 (21)
Total		527	628	578	890	1,151	1,189	1,076
Nuts:								
Canada		349	443	396	770	779	785	778
Netherlands		123	137	130	164	172	161	166
Total		472	580	526	934	951	946	944
Vegetable oils:								
Cuba	(83)	[3] 200	245	[4] 223 (142)	548	1,469	867	[4] 961 (782)
Cocoa and chocolate:								
Canada		72	74	73	98	108	137	115
Cuba	(4)	15	17	[4] 16 (10)	20	23	24	[4] 22 (21)
Total		87	91	89	118	131	161	137
Sirup, confectionery, honey, etc.:								
Canada		[3] 64	60	62	48	50	43	47
Cuba	(27)	[3] 55	63	[4] 59 (41)	86	101	107	[4] 98 (89)
Belgium		25	25	25	34	48	42	41
Total		144	148	146	168	199	192	186
Seeds:								
Canada		712	337	525	370	336	301	336
Nursery and greenhouse stock:								
Canada		99	98	98	118	146	142	135
Leaf tobacco:[13]								
France		2,580	3,302	2,941	2,771	2,498	2,758	2,676
Cornstarch:								
Belgium		90	82	86	81	89	90	86
Colombia[6]		8	1	4	7	2	19	9
GRAND TOTAL		35,748	39,058	37,403	48,337	64,829	79,551	64,236

[13] Excluding Colombian imports of United States leaf tobacco valued at $65,000 in 1935 and averaging $63,000 in the 3 subsequent (post-agreement) years.

Compiled from records of the Bureau of Foreign and Domestic Commerce (based on trade returns of the foreign countries).

TABLE 2.—*Imports of concession commodities from the United States into agreement countries compared with total United States exports of the same commodities*[1]

COMMODITY CATEGORY	PRE-AGREEMENT PERIOD (AVERAGE, 1934 AND 1935)		POST-AGREEMENT PERIOD (AVERAGE, 1936, 1937, 1938)	
	AGREEMENT COUNTRY IMPORTS FROM UNITED STATES	UNITED STATES EXPORTS TO ALL COUNTRIES	AGREEMENT COUNTRY IMPORTS FROM UNITED STATES	UNITED STATES EXPORTS TO ALL COUNTRIES
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Live animals	150	[2] 1,736	225	[2] 1,613
Horse meat	215	215	204	204
Pork	1,003	18,876	1,088	15,448
Poultry	42	416	37	381
Lard	2,645	18,983	4,383	15,925
Prepared milks	182	[2] 4,266	297	[2] 4,403
Dried eggs	19	19	65	65
Oats	1	167	1,636	1,759
Rice	916	3,781	3,235	4,869
Wheat and wheat flour	2,773	[2] 21,112	14,169	[2] 61,521
Other grains	86	86	387	387
Grain preparations	445	3,203	561	3,976
Hay	1	51	325	322
Oil cake and meal	8	336	315	1,265
Dried beans and peas	148	400	341	635
Fresh vegetables except onions and potatoes	2,646	2,957	4,206	4,265
Potatoes and onions	922	1,471	982	2,322
Canned asparagus	643	2,292	388	2,079
Canned vegetables except asparagus	417	1,267	439	1,874
Fruit and vegetable preparations	138	973	228	1,278
Yeast	219	559	160	624
Citrus fruits, fresh	6,206	13,085	7,901	13,713
Apples, fresh	3,945	15,639	4,952	13,121
Fresh fruits except apples and citrus	3,702	7,915	4,845	10,737
Dried raisins	836	4,947	1,607	6,856
Dried prunes	2,992	9,610	3,599	8,945
Dried fruits except raisins and prunes	887	8,150	1,115	7,608
Canned fruits	578	20,561	1,076	21,082
Nuts	526	1,932	944	2,348
Vegetable oils	223	2,014	961	2,540
Cocoa and chocolate	89	346	137	535
Sirup, confectionery, honey, etc.	146	1,583	186	2,009
Seeds	525	2,034	336	2,151
Nursery and greenhouse stock	98	220	135	356
Leaf tobacco	2,941	126,415	2,676	139,073
Cornstarch	90	1,638	95	2,387
Total	37,403	299,255	64,236	358,676

[1] The commodities composing each category have been selected so that the United States export data correspond as closely as possible to the relative foreign-country import data. The export averages in the "citrus fruits" category, for example, do not include United States exports of lemons because there was no trade in lemons receiving direct benefits under the agreements.

[2] Because of differences between the figures for foreign imports and United States exports of these commodities (caused chiefly by differences in customs classification), corresponding United States export data could not be obtained and foreign import statistics have been repeated.

Foreign import data computed from compilations by the Bureau of Foreign and Domestic Commerce from trade returns of foreign countries (see table 1). United States export data from *Foreign Commerce and Navigation of the United States.*

TABLE 3.—*Exports of concession commodities from the United States to countries granting concessions and to other countries*[1]

COMMODITY CATEGORY	YEAR ENDED DECEMBER 31			
	PRE-AGREEMENT PERIOD (AVERAGE, 1934 AND 1935)	POST-AGREEMENT PERIOD (AVERAGE, 1936, 1937 AND 1938)	INCREASE (+) OR DECREASE (-)	
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*Percent*
Total exports:				
To countries granting concessions	37,400	64,240	+26,840	+72
To all other countries	261,850	294,430	+32,580	+12
Wheat, wheat flour, other grains and preparations:				
To countries granting concessions	4,220	19,990	+15,770	+374
To all other countries	24,130	52,530	+28,400	+118
Dried raisins:				
To countries granting concessions	840	1,600	+760	+90
To all other countries	4,110	5,250	+1,140	+28
Canned fruits:				
To countries granting concessions	720	1,300	+580	+81
To all other countries	20,820	21,060	+240	+1
Nuts:				
To countries granting concessions	520	940	+420	+81
To all other countries	1,400	1,400	-	-
Prepared milks:				
To countries granting concessions	180	300	+120	+67
To all other countries	4,090	4,090	-	-
Lard and pork:				
To countries granting concessions	3,650	5,480	+1,830	+50
To all other countries	34,210	25,900	-8,310	-24
Vegetables, fresh and dried:				
To countries granting concessions	3,720	5,530	+1,810	+49
To all other countries	1,110	1,690	+580	+52
Fresh fruits, except apples and citrus:				
To countries granting concessions	3,700	4,840	+1,140	+31
To all other countries	4,210	5,890	+1,680	+40
Citrus fruits:				
To countries granting concessions	6,200	7,900	+1,700	+27
To all other countries	6,880	5,810	-1,070	-16
Fresh apples:				
To countries granting concessions	3,950	4,950	+1,000	+26
To all other countries	11,690	8,170	-3,520	-30
Dried fruits, except prunes and raisins:				
To countries granting concessions	890	1,120	+230	+26
To all other countries	7,260	6,490	-770	-11
Dried prunes:				
To countries granting concessions	2,990	3,600	+610	+20
To all other countries	6,620	5,350	-1,270	-19
Leaf tobacco:				
To countries granting concessions	2,940	2,680	-260	-9
To all other countries	123,470	136,400	+12,930	+10
Canned vegetables:				
To countries granting concessions	1,060	830	-230	-22
To all other countries	2,500	3,130	+630	+25
Others:[2]				
To countries granting concessions	1,820	3,180	+1,360	+75
To all other countries	9,350	11,270	+1,920	+21

[1] Not including cocoa beans, spices, coffee, and similar United States exports originally obtained from foreign sources, totaling about 1 million dollars in 1937, and about 150 items, individually unimportant, having an aggregate value of about 1.5 million dollars in 1937. Shipments to all other countries are obtained by subtracting agreement countries' imports from the United States of farm commodities accorded better trade treatment from total United States exports of the same commodities to all countries. Concessions include duty-reductions, favorable quota allotments, purchase guarantees, and other direct benefits, but do not include bindings.

[2] Chiefly vegetable oils, oil cake, seeds, cornstarch, hay, and live animals.

Foreign import data computed from compilations by the Bureau of Foreign and Domestic Commerce from trade returns of foreign countries (see table 1). United States export data from *Foreign Commerce and Navigation of the United States.*

TABLE 4.—*Estimated farm export gains attributable to trade agreements*[1] *(for the 3-year post-agreement period ending January 1, 1939)*[2]

COUNTRY OF DESTINATION AND COMMODITY	INCREASE IN VALUE	COUNTRY OF DESTINATION AND COMMODITY	INCREASE IN VALUE
	1,000 dollars		*1,000 dollars*
Canada:		Netherlands:	
Grains and preparations	12,400	Wheat and wheat flour	13,400
Citrus fruits	7,400	Fresh apples	900
Fresh vegetables[3]	4,300	Oil cake	800
Nuts	1,100	Dried prunes and raisins	800
Hay	1,000	Rice	400
Fresh apples	400	Nuts	100
Dried fruits	400	Total	16,400
Pork	300	France:	
Canned fruits; fruit and vegetable preparations	300	Fresh apples	3,200
Live animals	300	Dried prunes and raisins	3,100
Dried beans and peas	200	Citrus fruits	600
Canned vegetables	100	Canned fruits	300
Dried eggs	100	Total	7,200
Total	28,300	Switzerland:	
Cuba:		Wheat	4,300
Lard and pork	13,300	Lard	200
Rice	9,700	Total	4,500
Vegetable oils and oil cake	2,700	Belgium:	
Vegetables, fresh and dried	800	Fresh fruits	800
Canned vegetables	300	Dried fruits	700
Canned fruits	500	Canned fruits	700
Grain preparations	100	Total	2,200
Others[4]	200	Others:[5]	
Total	27,600	Dried fruits	500
Sweden:		Prepared milks	400
Fresh fruits	1,500	Fresh apples	600
Dried raisins	300	Lard	300
Canned fruits	200	Others[6]	100
Total	2,000	Total	1,900
		TOTAL ALL COUNTRIES[7]	90,100

[1] Computed from data given in tables 1 and 2. [2] Except for the agreements with Cuba and Finland. Gains attributable to these agreements were calculated on the basis of 4-year (Cuba) and 2-year (Finland) post-agreement periods. [3] Flat increase (see text, p. 64). [4] Chiefly confectionery, cocoa, chocolate, dried raisins. [5] Chiefly Finland, Colombia, Brazil. [6] Canned fruits, canned vegetables except asparagus, and cornstarch. [7] Not including gains which would be revealed if the present method were applied to about 150 additional items, individually unimportant, having in 1937 an aggregate value of about 1.5 million dollars. An indication of the probable results is given by the fact that of these a group of 18 items (all those of appreciable value) accorded better trade treatment under the agreement with Colombia account for gains attributable to the agreements amounting to an annual average of more than $200,000. Moreover, the present study does not include examination of United States exports of cacao beans, coffee, spices, and similar commodities originally from foreign sources. Export trade in these commodities receiving better trade treatment was valued at about 1 million dollars in 1937.

Compiled from official sources.

TABLE 5.—*Imports into the United States of supplementary agricultural products on which duties were reduced*[1]

COMMODITY	YEAR ENDED JUNE 30			
	PRE-AGREEMENT PERIOD (AVERAGE 1934-35 AND 1935-36)	POST-AGREEMENT PERIOD (AVERAGE, 1936-37,[2] 1937-38, AND 1938-39)	INCREASE FROM PRE-AGREEMENT AVERAGE	DECREASE FROM PRE-AGREEMENT AVERAGE
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Cattle	5,873	9,735	3,862	
Turkeys	1	16	15	
Chickens, ducks, geese, guineas (live)	44	386	342	
Chickens, guineas (dead)	27	37	10	
Cream	3	90	87	
Emmenthaler cheese (Swiss)	1,654	2,304	650	
Gruyere process cheese	438	747	309	
Roquefort cheese	784	754		30
Cheddar cheese	125	730	605	
Blue-mold cheese	531	591	60	
Edam and Gouda cheese	488	559	71	
Gelatin, edible (valued less than 40¢ per pound)	243	733	490	
Work horses	1,120	969		151
Oats, unfit for human consumption	5	3		2
Broken rice	935	1,597	662	
Pearl barley	68	163	95	
Cereal . . . foods, n.s.p.f.	6	14	8	
Cracked corn	1	16	15	
Hay	451	639	188	
Lima beans, green	148	137		11
Split peas	8	7		1
Peas, green (except cowpeas, chickpeas)	178	182	4	
Certified seed potatoes	208	799	591	
Other white potatoes (table stock)	371	210		161
Turnips and rutabagas	609	853	244	
Tomatoes, natural state	1,938	1,677		261
Okra	61	74	13	
Cabbage	2	3	1	
Eggplant	138	123		15
Peppers	241	180		61
Cucumbers	48	51	3	
Squash	0	n.q.	-	
Pickled onions	62	124	62	
Canned peas, (valued 10¢ or more per pound)	23	57	34	
Canned mushrooms	190	219	29	
Sauerkraut	9	18	9	
Yeast . . . for flavoring	102	123	21	
Chicory and endive	60	168	108	
Grapefruit	96	98	2	
Limes	222	198		24

[1] Where commodities were not separately classified, estimates have been used. The data are confined so far as practicable to trade actually enjoying lower duties under the trade agreements. Thus the figures for cattle include calves, and cattle weighing 700 pounds or over, since imports in these categories (subject, however, to quota limitations) enjoy lower duties; but they do not include cattle weighing 200 pounds and less than 700 pounds because imports in this category are subject to the statutory rate. Where seasonal or quantitative restrictions came into operation, restoring statutory rates, imports during the period are included in the figures even though they no longer enjoyed reduced duties. Similarly, the figures include imports from all countries, although lower rates provided in the agreement with Cuba do not extend to other countries. Figures for corn imports are omitted because only a small part of total corn imports was affected by the preferential duty-reduction accorded Cuba. In the 4 years ending December 31, 1938, corn imports from all countries averaged $23,204,000 annually, and from Cuba $23,000 annually. The lower duty applied to Cuban corn does not extend to corn from other countries.

[2] Agreements were in effect throughout the post-agreement period with Cuba, Belgium, Haiti, Sweden, Brazil, Canada, the Netherlands, Switzerland, Honduras, Colombia, Guatemala, and France. Imports affected by later agreements are not included because either the volume of trade involved was small or the duty reductions were not in operation long enough to have an important effect.

TABLE 5.—*Imports into the United States of supplementary agricultural products on which duties were reduced*[1] - Continued

COMMODITY	YEAR ENDED JUNE 30			
	PRE-AGREEMENT PERIOD (AVERAGE 1934-35 AND 1935-36)	POST-AGREEMENT PERIOD (AVERAGE, 1936-37,[2] 1937-38, AND 1938-39)	INCREASE FROM PRE-AGREEMENT AVERAGE	DECREASE FROM PRE-AGREEMENT AVERAGE
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Pineapples, fresh	819	1,312	493	
Pineapples, canned	605	1,875	1,270	
Apples	15	52	37	
Strawberries, natural	36	57	21	
Cherries, natural	80	46		34
Cherries, maraschino, candied, etc.	4	7	3	
Jellies, jams, etc.	143	154	11	
Blueberries, frozen and otherwise prepared	199	449	250	
Mango and guava paste and pulp	27	60	33	
Guavas, prepared, n.s.p.f.	0	2	2	
Candied fruits, n.s.p.f.	16	16	-	-
Brazil nuts	2,012	2,727	715	
Candied chestnuts, marrons	2	3	1	
Cacao butter	2	4	2	
Maple sugar	468	1,115	647	
Honey	10	21	11	
Champagne and all other sparkling wines	2,153	3,008	855	
Vermuth	2,131	2,080		51
Still grape wines	2,270	2,561	291	
Castor beans	2,347	2,874	527	
Poppy seeds	386	561	175	
Alfalfa	14	672	658	
Alsike clover	2	222	220	
Red clover	1	1,057	1,056	
Sweet clover	23	534	511	
Bluegrass	25	18		7
Timothy seed	323	7		316
Cabbage, turnip seeds; other garden and field seeds	950	897		53
Tulip bulbs	1,223	1,534	311	
Crocus corms, bulbs . . . n.s.p.f.	122	163	41	
Rose stock and plants	112	73		39
Potato starch	192	201	9	
Flavoring extracts containing alcohol	45	33		12
Tobacco: leaf for cigar wrappers[3]	4,233	4,353	120	
Flax, not hackled, (valued $340 or more per ton)	1,056	719		337
Cane sugar from Cuba	99,362	76,643		22,719
Total	138,919	131,494	16,860	24,285
Total, excluding sugar	39,557	54,851	16,860	1,566

[3] Preferential duty reductions on filler and scrap tobacco accorded under the Cuban agreement were terminated in March, 1936. Data covering imports of these grades consequently are not included.

Compiled from official sources.

TABLE 6.—*Imports into the United States of supplementary agricultural products on which duties were reduced - analytical breakdown*[1]

IMPORT CLASSIFICATION	YEAR ENDED JUNE 30			
	PRE-AGREEMENT PERIOD (AVERAGE, 1934-35; 1935-36)	POST-AGREEMENT PERIOD (AVERAGE, 1936-37; 1937-38; 1938-39)[2]	INCREASE (-) OR DECREASE (-) FROM PRE-AGREEMENT PERIOD	
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*Percent*
Commodities which failed to respond to better trade treatment:				
Cane sugar from Cuba	99,362	76,643	-22,719	-23
Others, chiefly vermuth, fresh vegetables, fresh limes, work horses, garden and field seeds, flax, Roquefort cheese	9,697	8,131	-1,566	-16
"Domestic deficiency" commodities:				
Cattle	5,873	9,735	+3,862	
Poultry	72	439	+367	
Total	5,945	10,174	+4,229	+71
Imports of benefit to farmers:				
Grass-seeds	40	2,485	+2,445	
Seed potatoes	208	799	+591	
Hay	451	639	+188	
Total	699	3,923	+3,224	+475
Foreign specialties:				
Champagne and wines	4,423	5,569	+1,146	+26
Fancy cheeses (Swiss, Gruyere, Blue-mold, Edam, and Gouda)	3,111	4,201	+1,090	+35
Food specialties (endive, pickled onions, canned peas, canned mushrooms, candied chestnuts, candied fruits, maraschino cherries)	357	594	+237	+66
Wrapper tobacco	4,233	4,353	+120	+3
Total	12,124	14,717	+2,593	+21
Others:				
Exotic commodities:				
Pineapples, fresh	819	1,312	+493	
Pineapples, canned	605	1,875	+1,270	
Brazil nuts	2,012	2,727	+715	
Castor beans	2,347	2,874	+527	
Total	5,783	8,788	+3,005	+52
Broken rice, maple sugar, cheddar cheese, edible gelatin, tulip bulbs, blueberries, poppy seeds, turnips	4,188	7,572	+3,384	+81
Minor items (20)[3]	1,121	1,546	+425	+38
Total	11,092	17,906	+6,814	+61
Total, duty-reduced by agreements	138,919	131,494	-7,425	-5
Total, duty-reduced by agreements excluding sugar	39,557	54,851	+15,294	+39
Total, duty-reduced by agreements, excluding commodities which failed to respond to better trade treatment (Group 1)	29,860	46,720	+16,860	+57
Total, supplementary farm imports with trade treatment unchanged	430,838	515,598	+84,760	+20
Total supplementary farm imports	569,757	647,092	+77,335	+14

[1] Where commodities were not separately classified, estimates were used.

[2] Agreements were in effect throughout the post-agreement period with Cuba, Belgium, Haiti, Sweden, Brazil, Canada, the Netherlands, Switzerland, Honduras, Colombia, Guatemala, and France. Imports affected by later agreements are not included, since either the volume of trade involved was small or the duty-reductions were not in operation long enough to have an important effect.

[3] Chiefly pearl barley, cream, crocus corms, apples, and mango and guava paste and pulp.

Compiled from official sources.

TABLE 7.—*Imports of supplementary agricultural products into the United States: Maximum values attributable to duty reductions*

ITEM	TOTAL INCREASES, AVERAGE 1936-1939	DEDUCTIONS[1]	INCREASES ATTRIBUTED TO DUTY REDUCTIONS
	1,000 dollars	*1,000 dollars*	*1,000 dollars*
Imports of benefit to farmers (seeds, etc.); and exotic commodities (pineapples, etc.)	6,300	6,200	
Domestic deficiency commodities (chiefly cattle)	4,300	3,300	1,000
Champagne and wines	1,100	700	400
Fancy cheeses	1,100	700	400
Food specialties	200	100	100
Wrapper tobacco	200	200	-
Maple sugar	600	300	300
Cheddar cheese	600	400	200
All others	2,600	-	2,600
Total	16,900	11,900	5,000

[1] Estimates arrived at by an evaluation of the specific situations prevailing for each group of commodities. (see pp. 67-68).

Compiled from official sources.

TABLE 8.—*Imports into the United States of complementary agricultural products on which duties were reduced*

COMMODITY	YEAR ENDED JUNE 30			
	PRE-AGREEMENT PERIOD (AVERAGE, 1934-35; 1935-36)	POST-AGREEMENT PERIOD (AVERAGE, 1936-37; 1937-38; 1938-39	INCREASE (+) OR DECREASE (-)	
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*Percent*
Ipecac (advanced in value)	(1)	(1)	-	-
Prepared cocoa[2]	335	385	+50	+15
Prepared chocolate[3]	71	186	+115	+162
Vanilla beans	1,513	2,917	+1,404	+93
Essential or distilled oils[4]	355	623	+268	+76
Total above	2,274	4,111	+1,837	+81
Complementary farm imports not granted concessions	465,452	578,956	+113,504	+24
Total complementary farm imports	467,726	583,067	+115,341	+25

[1] Negligible, if any.

[2] Includes negligible amounts of sweetened cocoa valued at less than 10 cents per pound on which no concession was granted.

[3] Includes negligible amounts of sweetened chocolate valued at less than 10 cents per pound on which no concession was granted.

[4] Partly estimated.

Compiled from official sources.

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